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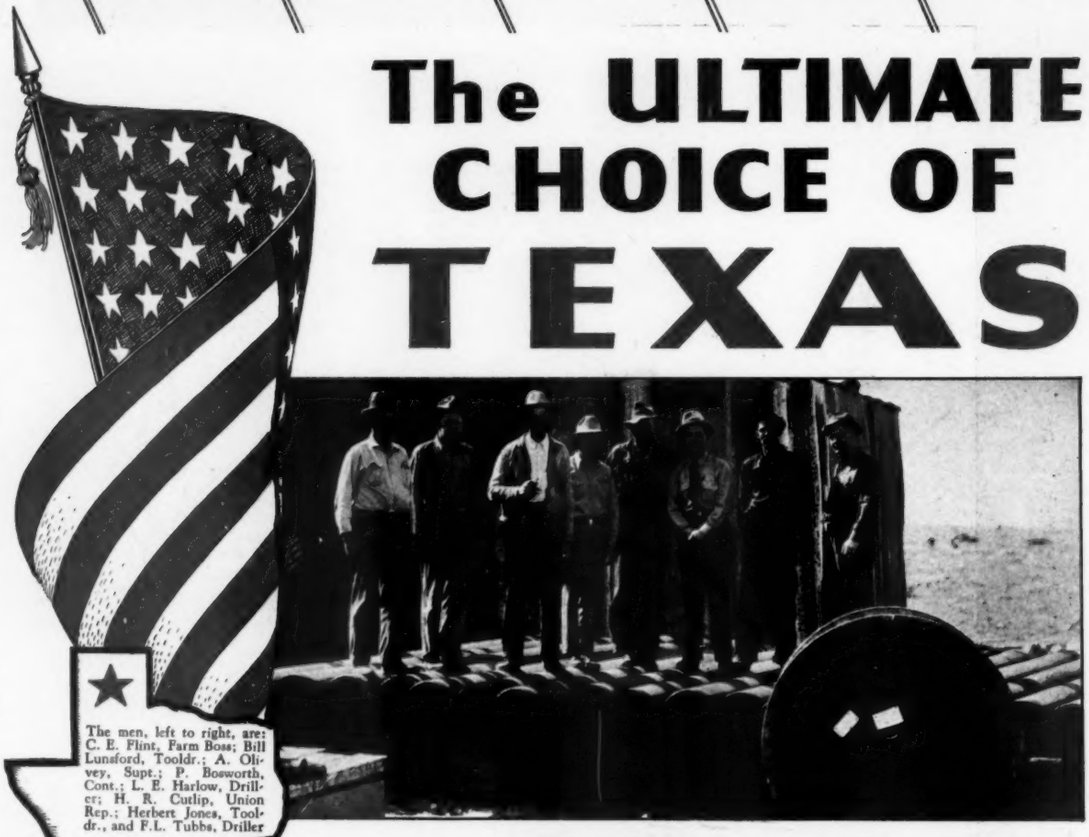

The men, left to right, are: C. E. Flint, Farm Boss; Bill Lunsford, Tooldr.; A. Olivey, Supt.; P. Bosworth, Cont.; L. E. Harlow, Driller; H. R. Cutlip, Union Rep.; Herbert Jones, Tooldr., and F.L. Tubbs, Driller

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# THE OIL AND GAS JOURNAL

Volume 33
Number 7

July 5, 1934

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# Pacific Coast Situation Improves, But General Oil Outlook Changed Little During Past Week

By JAMES McINTYRE

THE general oil situation changed very little, if any, during the past week. The price structure is wobbly, but with all purchasing companies that post prices sticking tightly to their schedules, and showing no indications of starting a downward movement. The weakest spot in the foundation of the petroleum structure, East Texas, continues to produce more oil than the law allows or the industry can absorb, and it is generally believed that much of the excess production entering the market for sale, is being paid for at discounted prices, giving the purchasers an unfair advantage over buyers who pay the posted rates for crude oil over the whole Mid-Continent territory.

In California restoration of normal prices for gasoline ending a long period of price cutting along the Pacific Coast area has greatly improved the outlook for the remainder of the year. The new marketing agreement became effective on July 1. Signers of the agreement have pledged themselves not to buy, produce or utilize any crude oil in excess of the quantity prescribed by the petroleum administrator.

Results of field operations in the past week included some notably large completions, discoveries, and extensions to pools.

Lea County, New Mexico, again demonstrated that it is an unusually prolific oil field by showing two new wells of large production. One of these wells produced 17,625 bbls. naturally in 24 hours and the other 10,400 bbls. in one day, after an acid treatment. The Gypsy Oil Co. owns the first well and the Shell Petroleum Corp., the other. Both are in the Hobbs Pool.

In the Texas Gulf Coast area a new field in Refugio County, two good producing wells in the recently discovered Cockfield sand at Raccoon Bend in Austin County, and favorable indications of production in the second Cockfield sand in the Sour Lake Field in Hardin County, were high lights of the week, together with the fact that several important tests are nearing the critical stage.

All previous records of a week's results in field work in Michigan were broken last week when 11 wells were completed with an aggregate initial production of 28,872 bbls. and several other wells were in the sand but not yet tested for production. Most of the new producers are in Porter Township, Midland County. One of the wells was rated at 14,497 bbls. potentially, but was permitted to make only a short flow test.

In Oklahoma the Polo Pool, west of Perry, opened by the Texas Co. in Noble County, is assured of a major pipe line connection in a very short time. The Wilzetta Pool in Lincoln County has its second successful test.

## Crude Oil Production in the United States

Estimated daily average production for the week ending June 30, and a comparison with previous week and the Federal allowables follow:

| | | Federal allowable | |
|---|---|---|---|
| Oklahoma— | June 30 | June | June 23 |
| Oklahoma City | 177,800 | ..... | 188,845 |
| Seminole-St. Louis | 101,251 | ..... | 107,250 |
| Remainder of State | 236,039 | ..... | 234,315 |
| Total Oklahoma | 515,090 | 511,700 | 530,410 |
| East Texas— | | | |
| Lathrop | 245,750 | ..... | 243,890 |
| Kilgore | 178,640 | ..... | 177,260 |
| Joiner | 159,360 | ..... | 158,160 |
| Total East Texas | 583,750 | ..... | 579,310 |
| West Texas | 138,465 | ..... | 138,365 |
| North Central Texas | 91,903 | ..... | 91,245 |
| Texas Panhandle | 58,911 | ..... | 60,512 |
| East Central Texas | 54,887 | ..... | 54,658 |
| Gulf Coast—Texas | 170,955 | ..... | 169,015 |
| Southwest Texas | 49,204 | ..... | 49,141 |
| Total State of Texas | 1,148,075 | 1,032,300 | 1,142,246 |
| Kansas | 131,330 | 130,300 | 127,355 |
| North Louisiana | 25,240 | ..... | 25,210 |
| Gulf Coast—Louisiana | 67,545 | ..... | 57,662 |
| Total Louisiana | 92,785 | 83,000 | 90,580 |
| Arkansas | 31,535 | 33,000 | 31,660 |
| Eastern Fields (except Michigan) | 102,000 | 108,900 | 102,000 |
| Michigan | 29,247 | 32,800 | 30,179 |
| Rocky Mountain | 96,840 | 96,000 | 93,950 |
| California— | | | |
| Santa Fe Springs | 39,500 | ..... | 42,500 |
| Long Beach | 67,800 | ..... | 73,000 |
| Mountain View | 13,400 | ..... | 8,750 |
| Elwood | 10,200 | ..... | 11,750 |
| Kettleman Hills | 68,000 | ..... | 65,000 |
| Remainder of State | 316,600 | ..... | 334,750 |
| Total California | 515,500 | 500,300 | 535,750 |
| Total United States | 2,662,402 | 2,528,300 | 2,676,422 |

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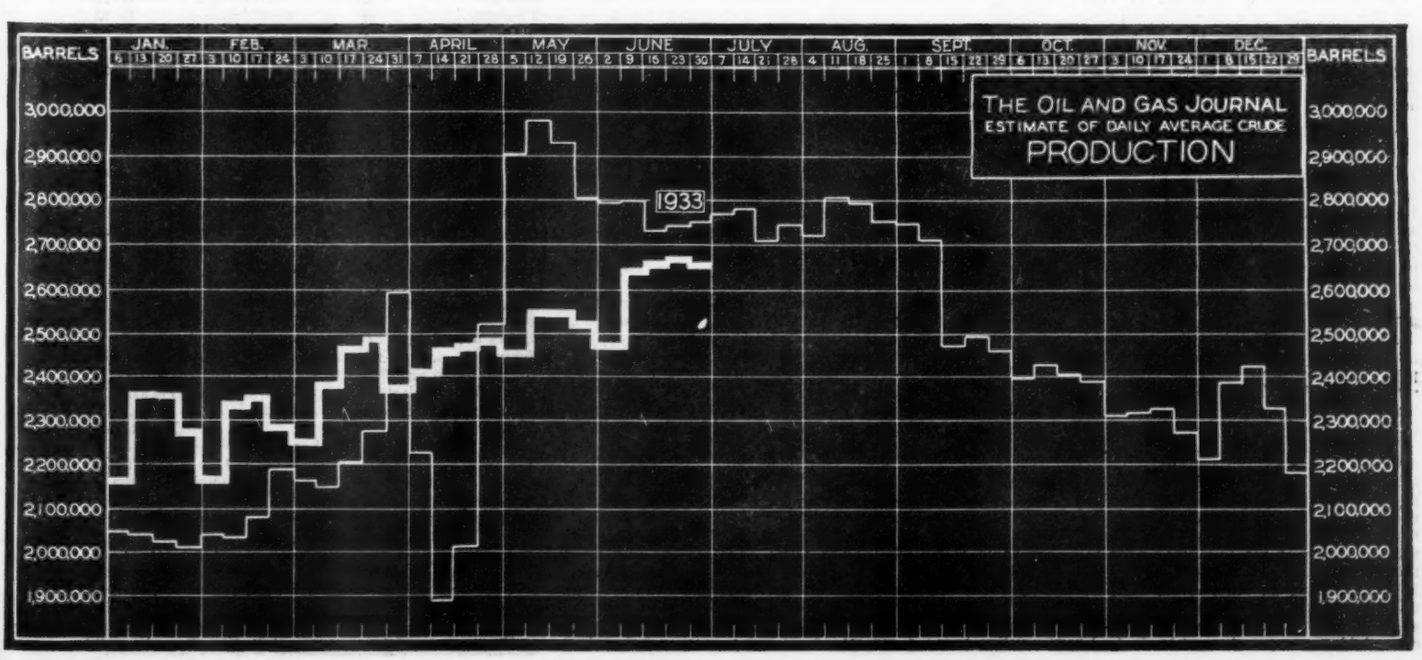


# New Line Laid in Old in Houston Ship Channel by Gulf and Humble Pipe Line Companies

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., July 2.—A method of replacing old pipe line crossings of the Houston Ship Channel without the usual procedure and necessity of raising the old lines and re-laying the new has been carried out successfully in recent months by two pipe line companies, the Gulf Pipe Line Co. and the Humble Pipe Line Co. The first attempt at this method, which consists simply of pulling a string of new pipe through the old line, was made by the Gulf Pipe Line Co. at its Lynchburg crossing several months ago. There a string of new 8-inch pipe was run through an old 12-inch line. The success of the undertaking led the Humble Pipe Line Co. into trying the same thing at its Baytown crossing the past week.

In the Humble job approximately 2,560 feet of 6-inch seamless pipe was run through an old 10-inch line. It is now believed that 8-inch pipe could have been put through without trouble, but at the time it was not deemed advisable to risk it due to the uncertainty as to the condition of the interior of the old line.

The latter line was one of two 10-inch channel crossings at that point which had been purchased from the Houston Pipe Line Co. several years ago and which had been in service a number of years previous to that by the latter company as a part of its gas transportation system. Lately the one line had been leaking considerably and the Humble Pipe Line Co. was faced with a job either of raising and repairing the leaks in that line or else of laying an entirely new crossing.

The cost of raising, repairing the present leaks, and then re-laying the old line was not considered justifiable in view of the fact that the line was old and there was no assurance that even after the work had been completed additional leaks might not develop shortly, making it necessary to do the entire job over again.

### Difficulties Avoided

This led to a decision to lay new pipe for the crossing, but whether an old line is to be raised and then relaid or a new line put in does not lessen the problems and handicaps of laying the crossing. The Ship Cannel is a navigable stream over which a constant stream of shipping to and from Houston passes. The depth of the channel must be maintained between 30 and 35 feet, which is done by dredging, and to facilitate dredging and also to protect the lines from damage, all pipe lines are required to be laid at a safe depth below the bed of the channel. This usually is from 40 to 45 feet below mean tide level.

The lines are laid in trenches dredged across the channel, the trenches quickly filling up with silt and sand after a line is laid. So rapidly does the silt wash in that in many instances it is difficult to keep a trench dredged out long enough for the laying of the line. This adds to the difficulties of making channel crossings. In raising an old line for repairs, the pipe must be uncovered by dredging and then before the line can be repaired and relaid, a new trench must be dredged.

For any work on old lines or laying of new lines, permits must be obtained from the Port Commission of Houston, which sets a specified time in which the work must be done. During that period shipping on the channel is stopped and the pipe line company in turn is held responsible for any damage claims which might arise due to delays in shipping.

With only a limited time allowed, the crossing work must be carried on rapidly and according to a definite schedule, which sometimes, especially in the case of major repair jobs, is difficult to determine in advance. Every preparation for emergencies have to be made in advance of such undertakings so there will be as few hitches as possible.

### Push New Pipe Through

All these handicaps and problems were eliminated by the Gulf Pipe Line Co. and Humble Pipe Line Co. in the replacing of their respective lines by the pushing of the new pipe through the old. Naturally there was no occasion for dredging, tieing up of traffic, disturbing of the old lines, or performing other operations or routine necessary with the usual channel crossing jobs. Each job was accomplished with a minimum of effort and cost, the only procedure being to cut the line at a short distance back on either side of the channel and then run the new pipe through the old line. With this done it then was only necessary to weld the crossing section into the lines and the job was completed.

At the point where the Humble line crosses, the channel is approximately 2,500 feet wide. The Gulf crossing at Lynchburg was somewhat shorter. No trouble was encountered in either job. In fact, in the Humble project the new pipe went through so easily that at one time it came nearly getting away from the crews and sliding clear in. Quick action of a member of the crew in throwing a tong around the end of the sliding pipe stopped it, thereby avoiding a serious situation in which it might have been necessary to raise the old line to recover the new pipe.

In the Humble job the pipe for crossing the channel was laid out in 200-foot sections. When the first section was pushed into the old 10-inch line to the end, the second section was welded on and pushed in, and so on the line was run through until all the sections had been welded on. Pushing of the pipe through the line was accomplished by a small tractor, which as the successive sections were welded in place, was hooked on to the end of the pipe.

A rounded plug placed on the front end of the first section of pipe prevented the pipe from catching on any obstruction on the inside of the old 10-inch line. The new line was greased thoroughly as it entered the old line to facilitate its movement, and in addition the old line was kept filled with water during the operation which gave a certain buoyant effect to the incoming pipe.

### Increased Strength

Another feature which was provided coincidently with the running of the new line through the old is the increased strength and protection given the crossings. The new line has the double support which the old line already imbedded in place affords and also does not come into contact with the corrosive action of the water and soil. Also, in the case of the Humble job, heavy sweet oil crude bottoms or refinery residue will be pumped into the old 10-inch line to fill it around the outside of the new 6-inch line. This will provide a thick coating to keep out any water or air or other elements with the old outside pipe serving as a shell or wrapping.

Reduction in the size of the crossing from a 10-inch to a 6-inch line in the case of the Humble job naturally results in a decrease in capacity of the system but this decrease has been figured around only 5 per cent, and as the extra capacity is not needed at this time the reduction is not of any particular concern.

# Secretary Ickes' Differential Order Is Meeting With Serious Protests From Oil Industry

Secretary Harold L. Ickes' order of May 21 establishing a basis for adjustment of differentials between the rates for skilled jobs and minimums established for common labor in the oil industry, has met with serious protest from the oil industry speaking through its associations.

Axtell J. Byles, president of the American Petroleum Institute, sent a letter of protest to Secretary Ickes, a copy of which is as follows:

"My dear Mr. Secretary:

"Last week the Executive Committee of the American Petroleum Institute asked me to file with you a protest against the order promulgated May 21, 1934, establishing a basis for adjustment of differentials between the rates for skilled jobs and minimums established for common labor as provided in Article 2, Section 4, of the Code of Fair Competition for the Petroleum Industry.

"Uniformity in working hours for all labor in each branch of the industry and uniformity in basic common labor hourly wage rates have been achieved under the code. The industry feels that reasonable uniformity of hourly wage rates for skilled workers performing generally similar classifications of work in competitive operating areas, also, should be established. Progress along this line even before the adoption of the code had been substantial. The order of May 21, because of the form of adjustment, is individualisitc in nature and, taken at its face value, works against this trend. In fact, it operates to destroy progress already made along these lines. Perhaps the principal point of contention, or misunderstanding, between the industry and the policy board during the formulation of this order and at the public hearing was over this matter. The recent discussions with members of the policy board have indicated that the order may permit of such interpretations as to bring about compatibility between the two points of view. Nothing conclusive along these lines has as yet been accomplished. I believe that a reasonable time should be allowed for the continuance of these discussions before the order becomes effective and that the industry should be so notified.

"As to whether or not many operators can meet the wage scales established in the order and stay in business under present conditions is a question which I am, at the moment, unable to answer. I have no doubt that these operators will ask for and receive full and fair consideration. In this connection, it is to be noted, however, that the order provides no means of relief for such situations. It states that disputes which may arise may be referred to the policy board, but this seems to apply to disputes over details of the application of adjustments and not to permit consideration of ability to pay.

"The industry is practically unanimous in its protest against the retroactive feature of the order. Products have been priced and accounts closed on past current pay roll expense. The amount of back pay which would become due under the order would, I have been advised, be sufficient to compel many small operators to cease conducting their business. In the drilling, producing, transportation, refining and marketing (exclusive of service stations) branches of the business, the rates of pay prior to the order were well above the average of those in almost all other industries. I will not argue the legality of the retroactive clause, though I think its legality is doubtful. The fact is, that the industry feels it to be unjust and impracticable and consequently is opposed to it. I am hopeful that, with the exception of the retroactive provision, the order through interpretation and possible modifications may be made acceptable to the majority of the industry. The volume and nature of the protests against the retroactive provision of the order are such, however, as to have convinced me that this provision should be rescinded.

"Yours very truly,

"AXTELL J. BYLES."

### Protest From Mid-Continent

The wage differential order was declared invalid and unconstitutional and a general protest was entered against it at a largely attended meeting of the Mid-Continent Oil & Gas Association at its general headquarters on Friday, June 27. The meeting was presided over by J. D. Collett, president of the association, who is also acting chairman of the Planning and Coordination Committee in the absence of Chairman Amos L. Beaty. The Kansas, Oklahoma, Texas, Arkansas and Louisiana divisions of the association were all represented at the meeting together with representatives of the New Mexico Oil & Gas Association.

At the conclusion of the session the following telegram was dispatched to the Petroleum Administrator:

"Harold L. Ickes,

"Petroleum Administrator:

"The board of directors of the Mid-Continent Oil & Gas association, assembled in special meeting today, June 29, considered the wage differential order is-

(Continued on Page 32)

# Interstate Commerce Commission to Hold Hearing on Pipe Line Reductions and Gathering Charges

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 2.—The Interstate Commerce Commission today ordered an investigation of reduced rates and gathering charges recently put into effect by oil pipe lines to and between 11 states in the Southwest and Middle West.

Secretary Ickes, oil administrator, had asked the commission to refuse to allow the rate reduction. The commission previously had said it would not interfere with the rates pending an investigation. The commission's announcement follows:

"The commission having under consideration the lawfulness of the reduced rates and gathering charges for the interstate transportation of crude petroleum or crude petroleum by pipe line from wells in Kentucky, Arkansas, Kansas, Oklahoma, Louisiana, Texas, Illinois, and New Mexico to destinations in Illinois, Indiana, Michigan, Missouri, Kansas, Oklahoma, Texas, Ohio, Kentucky, West Virginia, and Louisiana, as published and set forth in Atlantic Pipe Line Co.'s tariff I.C.C. No. 13; Empire Pipe Line Co.'s tariffs I.C.C. Nos. 26 and 27; Humble Pipe Line Co.'s tariffs, Supplement No. 1 to I.C.C. No. 128 and I.C.C. Nos. 138 and 139; Oklahoma Pipe Line Co.'s tariff's I.C.C. Nos. 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161; Shell Pipe Line Corp.'s tariffs I.C.C. Nos. 57 and 58; Sinclair Prairie Pipe Line Co.'s tariffs I.C.C. Nos. 98, 99, and 100; Stanolind Pipe Line Co.'s tariffs I.C.C. Nos. 38, 39, 40, 41, 42, 43, 44, 45, 46, and 47; the Texas Pipe Line Co. of Oklahoma's tariff I.C.C. No. 24; the Texas-Empire Pipe Line Co.'s tariffs I.C.C. Nos. 36, 37, and 38; and the Illinois Pipe Line Co.'s tariffs I.C.C. Nos. 95, 96, 97, and 98.

"It is ordered, that the commission, upon its own motion, enter upon an investigation into and concerning the lawfulness of the reduced rates and gathering charges, as carried and set forth in the tariffs named in the preceding paragraph, for the interstate transportation of crude petroleum or crude petroleum oil by pipe line in order to determine to what extent and in what manner, if any, said rates and charges are or may be unreasonable, unjustly discriminatory, unduly prejudicial, unduly preferential, or otherwise in violation of any provision of the Interstate Commerce Act, and to make such findings and to enter such order or orders and to take any other such action as may be necessary to correct any unlawfulness that may be found to exist.

"It is further ordered, that all common carriers by pipe line, subject to the Interstate Commerce Act participating in the transportation above referred to, be, and they are hereby, made respondents to this proceeding; and that notice of this proceeding be given to the general public by depositing a copy of this order in the office of the secretary of the commission at Washington, D. C.

"And it is further ordered that this proceeding be assigned for hearing at such times and places as the commission may hereafter direct."

### Bureau of Labor Inquiry

The Bureau of Labor Statistics is launching about the middle of July a comprehensive study of wages, hours and working conditions in the petroleum industry. This survey is being undertaken in response to a request of the petroleum administration and the Planning and Coordination Committee. It is hoped, with the data assembled by this study, assistance will be given to the administration of the labor provisions of the code and also in the amicable adjustment of labor disputes.

Field agents from the bureau have been put through a special training course on the technological phases of the oil industry and on the instructions and forms to be used.

To determine the effect of the code upon labor, firms will be asked the number of employes and full time hours of work for each of the several rates under each occupation. The periods covered will be: May, 1929; May, 1933; May, 1934, and the current month. Reports will be asked on time workers only. Total employment, pay rolls and man hours covering all the workers on these dates will also be covered.

### Information on Employment Policies

The survey will also obtain from a representative sample of the industry a cross section of the wage structure, covering such facts as occupational descriptions, sex, color, age, average hourly wages, full time and actual hours worked. Supplementing this will be general information on employment policies, methods of wage payment and working conditions. Only those persons covered by the labor provisions of the code, clerical and manual employes, will be covered by this survey. Supervisors, administrative officers, etc., will not be covered.

### Congressional Investigation

Secretary Ickes, Oil Administrator, has announced that E. B. Swanson and J. Howard Marshall, members of the Petroleum Administrative Board, will accompany the special committee of the House Committee on Interstate Commerce investigating the oil industry, and would assist the committee in every way possible. In announcing the assignment, Administrator Ickes said:

"Committee members have advised me that they would appreciate having some of the major officials of the Oil Administration work directly with them. Mr. Swanson and Mr. Marshall were assigned after several conferences I had with Congressmen William P. Cole, Jr., of Maryland, chairman, and Martin Dies of Texas, counsel, and the various members. Mr. Swanson is chief of the production and refining division of the board. Mr. Marshall is especially qualified to aid the committee in looking into production and enforcement problems.

"I feel that committee members have a most important task before them, involving questions of a major national policy, and that several of our most competent men should assist them. Mr. Marshall and Mr. Swanson, I believe, will be exceptionally valuable because they are thoroughly familiar with the technical, legal and practical problems of the oil industry and enforcement of code provisions. Every effort will be made by the Oil Administration to co-operate with the committee members in their work in Washington and in the hearings contemplated in the oil producing states. Our entire staff and all our files, here and in the field, are available for the Committee's use.

"The committee, I am sure, wants to gather every fact possible for consideration in formulating a report for the next session of Congress. The Oil Administration is equally as sincere in desiring that every fact be developed bearing on the necessity for permanent legislation for the conservation and full utilization of our petroleum resources and the stability of the industry."

### Committe to Visit Tulsa First

The committee will begin work with a tour of the Mid-Continent and East Texas oil fields. The full committee plans to leave here July 7 for Tulsa, where they will be July 9 and 10; from Tulsa they go to Oklahoma City for one day, proceeding from there to Austin July 12, then to Houston, July 13-15, and to Tyler commencing July 16 for three or four days. A trip through the Pennsylvania fields was cancelled because members of the committee found it impossible to go there before leaving for Tulsa. Both Michigan and Pennsylvania will be visited before the investigation is concluded.

Representative Martin Dies, special counsel for the committee, is preparing for the acquisition of evidence to be used in the determinations of the committee. He has addressed a letter which includes a questionnaire to each refiner, pipe line company and producer in Texas, asking them to answer five questions, giving the source of information on which their conclusions are based and arguments predicated. The letter states:

### Questionnaire to Texas

"These briefs will not only give the views of the industry, in Texas, but will also furnish information. The five questions contained in the letter are:

"1. Whether there is an excessive supply of petroleum and its products.

"2. Whether such excessive supply, if it exists, injuriously affects commerce in petroleum and its products and has the effect of rendering unprofitable the operation of wells of small but settled production and will cause their abandonment before the maximum economic yield is obtained.

"3. Whether premature extraction of petroleum from natural resources, induced by absence of restrictions upon the quantity which may move in commerce, results in waste and inferior uses.

"4. Whether restrictions should be placed upon the quantities of petroleum and its products which may move in commerce when an excessive supply exists, and, if so, whether such restrictions should regulate and co-ordinate commerce in petroleum and its products among the several states and with foreign nations, with fair and equitable apportionment among the states and among different operators and sources of supply.

"5. Whether commerce in petroleum and its products is of such a nature that it may be regarded as a unit for the purpose of establishing quotas irrespective of whether transactions are interstate or intrastate, or whether exportation or importation is involved."

Replies to Mr. Dies' letter, when received, will be turned over to a staff of statisticians and technicians of the Bu-

(Continued on Page 31)

# Texas Allowable Is Cut by Commission; 36,000 Barrels Under Federal Limit

AUSTIN, Tex., July 2.—The Railroad Commission issued a new proration order, effective at 7 a.m. July 1, and expiring at 7 a.m., August 1, fixing the State allowable at 1,006,000 bbls. daily, 65,025 bbls. less than the previous figure, 142,967 bbls. less than the nominations for Texas crude and 36,000 bbls. less than the allocation of 1,042,000 bbls. certified by the U. S. Bureau of Mines as the market demand for July.

The reduction was a cut of 10 per cent in the flush fields of the State. East Texas, Van, Conroe, and Yates, leaving all others unchanged.

The new and previous allowables follow:

| | Bbls. July | Bbls. June |
|---|---|---|
| East Texas | 457,958 | 509,081 |
| Panhandle | 56,800 | 56,800 |
| West Central | 31,000 | 31,000 |
| West Texas | 135,089 | 140,718 |
| Southwest Texas | 52,625 | 52,650 |
| East Central | 50,490 | 55,246 |
| North Texas | 56,500 | 56,500 |
| Gulf Coast | 165,512 | 169,038 |
| Total | 1,006,000 | 1,071,023 |

Nominations for July totaled 1,147,666 bbls. daily, 1,149,618 bbls. in August and 1,149,615 bbls. in September.

In East Texas the 650 marginal wells with 20 bbls. daily permissible are not affected by the cut and their number is slightly increased as the present allowable of 5 per cent of an hour's flow was reduced to 4.5 per cent. Yates was cut from 56,500 bbls. daily to 41,850 bbls., Van from 47,500 bbls. to 42,750 bbls., and Conroe from 53,000 bbls. to 47,700 bbls. The East Texas allowable will increase almost daily as completions average 10 a day and the 4.5 per cent permissive will apply to each new well.

In announcing the 10 per cent cut in the four flush fields the commission stipulated that the new orders apply to corrected oil, meaning oil after the deduction of basic sediment and water correction for temperature and strappage.

At the hearing, the commission's new chief petroleum engineer, Gordon Griffin, recommended a 100,000-bbl. cut in East Texas, but only half of that amount was set. East Texas protested against taking anything from the district without making an equal subtraction in all other fields. The commission did that only as to the flush fields and none of the others.

Southwest Texas fields are unchanged except as follows: Callahan was raised from 70 bbls. to 300 bbls., Jacobs, 350 bbls. to 613 bbls.; Driscoll, 100 bbls. to 125 bbls., and Hilbig from 770 bbls. to 775 bbls.

Gulf Coast fields have only the following changes: Angelita was inserted at 250 bbls. daily, Coletto Creek at 150 bbls., Lucas raised from 51 bbls. to 75 bbls., Pettus cut from 2,500 bbls. to 2,200 bbls., New Pettus given 800 bbls., Cockfield, at Raccoon Bend, deep wells given 360 bbls., new Refugio Field allowed 800 bbls., Refugio Fox cut from 3,600 bbls. to 3,200 bbls., Vanderbilt given 400 bbls., New West Columbia allowed 360 bbls., being deep wells, Quintana-O'Connor allowed 150 bbls., and Tuleta 150 bbls. This district includes Conroe.

# Unforeseen Expenses Encountered in Drilling of Wildcats in West and North Texas Districts

By L. E. BREDBERG

CHILDRESS, Tex., July 2.—Drilling wildcats in West and Northwest Texas, be they to the regular lime, granite wash or dolomite pay formations found in these regions, or carried to the Ordovician horizon, has its trials and tribulations, causing many unforeseen expenses. Heaving sands, caves, craters, heavy water-bearing strata, sometimes gas pressure at various depths and exceptionally hard formations, such as one Ordovician test is now worrying through, are a few of the many bugaboos confronting the drilling crews and operators on these remotely located holes. Lack of water, gypwater and water carrying other chemicals that are corrosive to drilling machinery and boilers serve as a foremost problem when steam is used for power, consequently companies drilling wildcats have to look into the water situation before they contemplate moving machinery on location.

One type of rig and power may be the best in one area, but may be altogether too expensive and impractical in another district, therefore a company planning to drill a remotely situated wildcat spends considerable time in studying all phases of the venture.

One of the largest major company wildcatters in Texas is the Humble Oil & Refining Co. The company sinks tests all over the State, has a corps of engineers familiar with the various sections of the State, men who know the problems to be confronted in drilling in the various areas, whether field or wildcat tests. This company is now drilling one of the wildest of wildcats ever put down in the State. It is in Section 27, Block 9, H.&G.N. Survey, on the B. P. Smith Land & Cattle Co. ranch, approximately 22 miles northwest of Childress in Childress County, in the Panhandle district.

To prevent lack of water, or corrosive waters from holding up or interfering with drilling operations, gas motors are being used to supply the power for the drilling machinery and mud pumps instead of steam power. These motors require but little water for the radiators, the water being hauled from Childress, whereas water for mixing drilling mud is piped from a nearby creek. Two 325-horsepower, six-cylinder oil field special Waukesha motors are used in furnishing the power. Another small motor is attached to the large Waukeshas for starting them. One of these large motors can propell the drilling machinery and pumps, but greater efficiency in drilling is obtained from both motors. Natural gas, metered by Metric Metal Works meters and by Neilan gasometers located on the motors for correct distribution of gas to the carburetors, is used as fuel in the motors. About $8 to $9 worth of gas per day is used in drilling. Winslow down-flow air filters aid in the performance of the motors by filtering the air taken into the large carburetors. Twin Disc clutch insures smooth performance in throwing the motors in and out of gear.

*Left to right: C. L. Breland, J. K. Brady, T. W. Tarrant, clerk at the camp, Donohoe, Jack Harris, tool pusher, Claude Anders, is at the controls. Hu Harris, engineer for the Humble Oil & Refining Co., who is responsible for this new arrangement of equipment on the well, is in the fore of picture*

### Assembly an Innovation

The rig and assembly of the drawworks below the derrick floor is an innovation, and is in the experimental state, Hu Harris, engineer for the company, having designed the new arrangement of machinery and hookup, but the drilling crews vouch for its efficiency, the safety factors it adds to drilling, its economy and fulfillment of purpose.

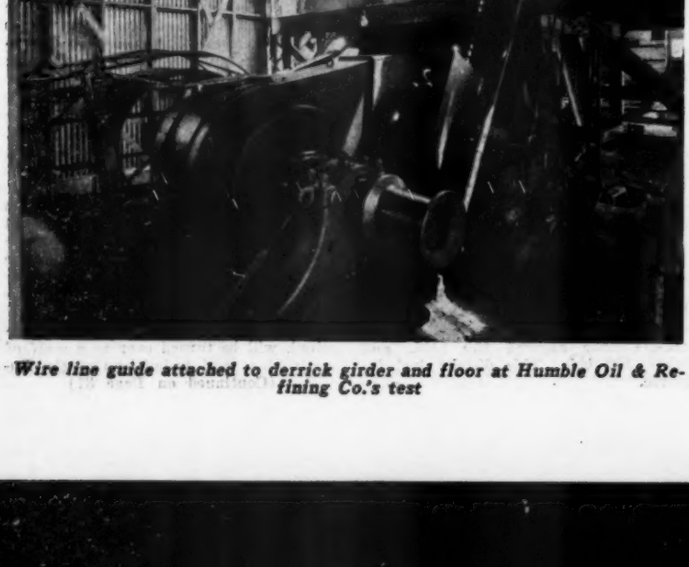
The drilling machinery and pumps are all located on skids at ground level, whereas the derrick floor is 8 feet above the ground on a substructure, which allows room for a 2,600-pound tested Cameron Iron Works blowout preventor above ground level, placed in position after the 13⅜-inch casing was set. This in combination with a **Baash-Ross Hausmer** preventor, used when drilling, lends a still greater safety factor to the drilling. The blowout preventor is tested every day to insure against any possible trouble occurring from it. A 13⅜-inch master gate is used when out of the hole for further protection.

The three main reasons for this arrangement of the pumps, engines and other heavy equipment necessary in drilling deep tests are economy, safety and efficiency. Placing the machinery on the ground eliminates the expense of constructing a large substructure to elevate the machinery level with the derrick floor, which is not necessary, as found by this experimental rig. It is much safer for the drilling crews because location of the machinery on the ground leaves the derrick floor with a minimum of moving equipment on it, also providing more room for the crews and racking of pipe on floor. In case of a fire, blowout, crater or other unforeseen trouble, as has happened on many wells, tractors can quickly couple to the machinery and "snake" it out on the skids on which it rests, whereas if it was located on substructures this equipment could not be removed out of the way of workers fighting a fire, or dealing with some other serious trouble on the well.

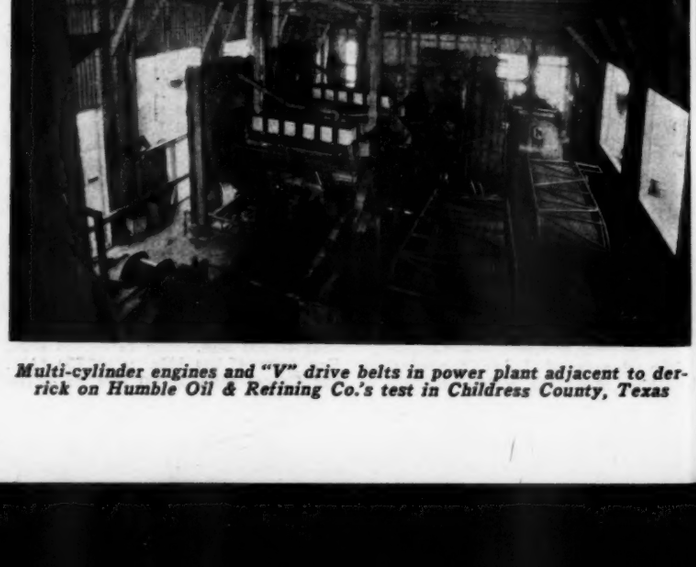
A 122-foot heavy duty (diamond type) Emsco steel derrick, with 8-foot substructure, is set on concrete foundations, the derrick having a dead-load capacity of 620,000 pounds and capable of handling exceptionally heavy loads, necessary in drilling to greater depths than the average wildcat or field test. A concrete cellar, 6'x10', was constructed under the derrick floor to provide plenty of room for landing surface casing and 13⅜-inch casing.

The drilling machinery and power plants are housed under one roof adjoining the rig, the substructure of the derrick containing only the Ideal drawworks

(Continued on Page 30)



*Wire line guide attached to derrick girder and floor at Humble Oil & Refining Co.'s test*



*Multi-cylinder engines and "V" drive belts in power plant adjacent to derrick on Humble Oil & Refining Co.'s test in Childress County, Texas*

# Compromise in Vapor Pressure Specifications for Gasoline Indicated at A. S. T. M. Meeting

ATLANTIC CITY, N. J., June 28.—Although no definite action was taken, a compromise was indicated in the efforts to establish motor fuel specifications covering the vapor lock problem in gasolines at the meeting of Committee D-2 (petroleum committee) of the American Society for Testing Materials which held its annual meeting here this week. A rather sharp difference of opinion in regard to proposed vapor pressure specifications was apparent in two prepared papers presented at the meeting by Dr. G. G. Brown of the University of Michigan and T. G. Boyd of the research department of the General Motors Corp. Neil MacCoull of the Texas Co., R. C. Alden of the Phillips Petroleum Co., Dr. O. C. Bridgeman, Bureau of Standards, and others also took part in the discussion.

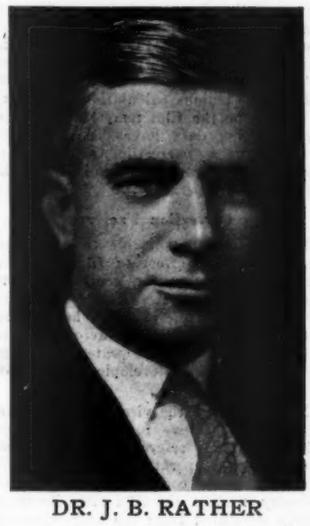
Section 3 on Vapor Lock in January of this year recommended to Technical Committee A that Reid vapor pressure (A.S.T.M. Tentative Method D 323-32T) of fuels as delivered to the fuel tank of the vehicle be established as the criterion of vapor lock quality and that certain specification limits be established. Members of Technical Committee A were not in agreement as to the proposed specifications and have not acted on the recommendation of Section 3. Considerable time was given at the meeting here to this problem with the hope that additional discussion would aid in arriving at specifications which shortly can be approved by the Society.

Doctor Brown, who has been doing research work centering around the vapor lock problem for several years in general approved the specification limits proposed while Mr. Boyd, representing the automotive industry, attacked the advisability of adopting the specifications from several angles.

From the angle of the oil business the higher the vapor pressure limits of gasoline the better because the higher limits make possible a profitable demand for butane and other more volatile fractions now partially wasted due to a lack of market outlets. To this end, technologists of the industry have advocated changes in engine design centering in the fuel lines which would enable higher vapor pressure gasolines to be used without the danger of vapor lock. Some changes have been made by engine manufacturers although Mr. Boyd and other engineers have pointed out the limitations of this trend in the efforts of designers to secure the maximum car performance with minimum costs. Some of the conclusions of the oil people in regard to engine heat and vapor pressure as related to engine performance and also test procedure have been attacked by the automotive technologists. The papers by Messrs. Brown and Boyd appear elsewhere in this issue.

### To Classify Diesel Fuels

In recognition of the widening demand for Diesel fuels, Committee D-2 at its meeting here decided that a classification of Diesel fuel oil will be published for information and criticism of refiners, engine manufacturers and consumers. Technical Committee C has prepared a classification which divides Diesel fuel into five grades with suggested minimum limiting characteristics necessary to insure satisfactory engine performance without extra cost to the consumer. The five grades classify the oils with respect to flashpoint, water and sediment, viscosity, carbon residue, ash, pourpoint and ignition characteristics in accordance with the requirements of Diesel engines which in turn are classified as to speed, type of injection, cylinder size and preheating equipment. The accomplishment of this objective covering Diesel oils in the near future will be a great service in a field in which considerable confusion exists at this time as to desirable fuel properties.



DR. J. B. RATHER

### Industrial Fuel Oils

Specifications for domestic and industrial fuel oils are being submitted to Committee D-2 by letter ballot. Subject to the approval by the committee these specifications will be submitted to E-10 for approval as A.S.T.M. tentative standards. Although no announcement was made here it is believed that some changes will be made in the proposed specifications before final approval. Some differences of opinion as between oil companies and between the oil companies and the burner manufacturers have developed which may delay action by the society. However, all the interests concerned are emphasizing the desirability of uniform specifications for the several grades of fuels including agreement as to methods of testing.

At the meetings of Committee D-2, all the important revisions in standards and tentative standards as outlined in the D-2 report made available previous to the meeting, were approved for adoption. The recommendations adopted covered the following general subjects:

1. Proposed revision of standards.

Test for sulphur in petroleum oils heavier than illuminating oil (D 129-33), immediate adoption.

Abridged volume correction table for petroleum oils (D 206-25), immediate adoption.

Test for dilution of crankcase oils (D 322-33).

Test for distillation of gasoline, naphtha, kerosene and similar petroleum products (D 86-30).

K. G. MACKENZIE

Test for precipitation number of lubricating oils (D 91-33).

Test for water and sediment in petroleum products by means of centrifuge (D 96-30).

Test for distillation of crude petroleum (D 285-33), editorial revision.

2. Proposed revision of tentative standards.

Test for color of lubricating oils by means of A.S.T.M. Union Colorimeter (D 155-32T).

Test for color of petrolatum by means of A.S.T.M. union colorimeter (D 218-32 T).

Test for color of refined petroleum oil by means of Saybolt Chromometer (D 156-23 T).

Test for sulphur in motor fuels, naphthas and illuminating oils (lamp method) (D 90-30 T).

2. Adoption of tentative revision of standard as standard.

Test for cloud and pourpoint (D 97-33), as revised.

### Correction Table for Oils

Of special importance is the revision of the Standard Abridged Volume Correction Table for Petroleum Oils (D 206-25) to include two additional groups by subdividing the lightest and heaviest groups in the previous table. This was done to improve accuracy for the benefit of both buyers and sellers.

The changes in the methods applying to proposed revisions of tentative standards for color are also considered highly important. The changes will improve uniformity in the mechanical and optical limits of the apparatus. Copies of all the changes recommended for petroleum products and lubricants can be obtained from the Society's headquarters in Philadelphia.

### Officers Re-elected

The following officers of Committee D-2 on Petroleum Products and Lubricants were re-elected to serve the coming year: Chairman, T. A. Boyd, General Motors Corp., Detroit, Mich.; secretary, R. P. Anderson, American Petroleum Institute, New York City; honorary chairman, A. E. Dunstan, Anglo-Persian Oil Co., Ltd., London, England; vice-chairman, T. G. Delbridge, Atlantic Refining Co., Philadelphia, Pa. Some changes were made in the advisory committee with the membership for the coming year as follows: Harold Farmer, Philadelphia Electric Co.; A. E. Flowers, DeLaval Separator Co.; G. G. Oberfell, Phillips Petroleum Co.; Dr. J. B. Rather, Socony-Vacuum Corp.; T. H. Rogers, Standard Oil Co. (Indiana), and C. B. Veal, Society of Automotive Engineers.

Dr. J. B. Rather, who is in charge of the general laboratories of the Socony Vacuum Corp., was elected a member of the executive committee of the A.S.T.M. Doctor Rather has been active in the work of Committee D-2 for several yars.

### Mackenzie Dinner

Doctor Rather, as a member of the executive committee representing the oil industry, succeeds K. G. Mackenzie of the Texas Co. Members of the committee Tuesday evening gave a dinner in Mr. Mackenzie's honor. Dr. T. H. Rogers of the Standard Oil Co. (Indiana), presided as toastmaster, which was attended by those who have been associated with Mr. Mackenzie in the work of the society. He was a pioneer in the work of Committee D-2 and has been prominently connected in all the important specification changes and methods of testing procedure which have been adopted by the oil industry over the past 20 years. He also served a term as president of the American Society for Testing Materials. Friends presented him with a set of books at the dinner.

## Federal Allocation of Consumptive Market Demand of Crude Oil for the United States

| State— | September, 1933 | October, 1933 | November, 1933 | December, 1933 | January, 1934 | February, 1934 | March, 1934 | April, 1934 | May, 1934 | June, 1934 | July, 1934 | Decrease or increase |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arkansas | 29,000 | 33,000 | 33,000 | 33,000 | 33,000 | 33,000 | 32,200 | 32,300 | 32,300 | 33,000 | 33,000 | 0 |
| California | 480,000 | 455,000 | 455,000 | 450,000 | 437,600 | 437,600 | 453,900 | 462,500 | 462,500 | 500,300 | 509,400 | 9,100 |
| Kansas | 111,000 | 116,000 | 116,000 | 112,000 | 110,000 | 110,000 | 112,300 | 122,100 | 122,100 | 130,300 | 134,500 | 4,200 |
| Louisiana | 70,000 | 70,000 | 70,000 | 69,300 | 69,300 | 69,300 | 71,800 | 72,400 | 72,400 | 83,000 | 88,900 | 5,900 |
| Michigan | 30,000 | 30,000 | 30,000 | 29,000 | 29,000 | 29,000 | 29,300 | 31,300 | 31,300 | 32,800 | 33,200 | 400 |
| New Mexico | 41,400 | 41,400 | 41,400 | 41,200 | 41,200 | 41,200 | 44,300 | 45,800 | 45,800 | 48,000 | 46,600 | —1,400 |
| Oklahoma | 540,000 | 495,000 | 495,000 | 457,000 | 446,600 | 446,600 | 456,400 | 476,400 | 476,400 | 511,700 | 489,500 | —22,200 |
| Texas | 975,000 | 965,000 | 965,000 | 888,000 | 884,000 | 884,000 | 947,900 | 980,700 | 980,700 | 1,032,300 | 1,042,100 | 9,800 |
| Rocky Mountain: | | | | | | | | | | | | |
| Colorado, Montana and Wyoming | 38,900 | 38,900 | 38,900 | 36,300 | 38,100 | 38,100 | 39,500 | 43,100 | 43,100 | 48,000 | 44,200 | —3,800 |
| Appalachian and Eastern: | | | | | | | | | | | | |
| New York, Pennsylvania, West Virginia, Ohio, Illinois, Indiana and Kentucky | 94,200 | 94,200 | 94,200 | 94,200 | 94,200 | 94,200 | 95,200 | 99,600 | 99,600 | 108,900 | 108,900 | 0 |
| Total | 2,409,700 | 2,338,500 | 2,338,500 | 2,210,000 | 2,183,000 | 2,183,000 | 2,282,800 | 2,366,200 | 2,366,200 | 2,528,300 | 2,530,300 | 2,000 |
| Increase or decrease | ..... | —71,200 | ..... | —128,500 | —27,000 | ..... | +99,800 | +83,400 | ..... | +162,100 | +2,000 | ..... |

# Graphic Approximation of Heat Transfer Rates For Use in Designing Refinery Equipment

By WAYNE C. EDMISTER

The object of this paper is to correlate and present in a single chart the data for film coefficients of heat transfer for both the heating and cooling of liquids in turbulent flow inside pipes. The charts developed are meant for engineering work and not as a scientific contribution.

For most engineering calculations, graphic presentations of data and formulas are desirable and as accurate as the problem warrants. In applying charts constructed from laboratory observations to actual plant conditions, the engineer, naturally, must make allowances for these conditions.

Heat transfer is one of the many problems encountered. In this paper charts, based on laboratory observations, will be developed for the approximation of heat transfer coefficients of oils being heated by steam or cooled by water while flowing in a turbulent state inside a tube. Auxiliary charts are also constructed and included as supplements. The major factors affecting film coefficients of oils inside a tube are the mass velocity and the viscosity. Other factors are the specific heat and thermal conductivity of the oil.

The data of Morris and Whitman[1], of Sherwood, Kiley and Mangsen[2] and of Keevil and McAdams[3] were used in the construction of the accompanying charts.

### Film Viscosities

It is generally recognized that the specific heat, thermal conductivity, and viscosity of a liquid affect the heat transfer coefficients. That is, for the same ratio of flow and temperature difference, considerably less heat can be transferred to or from a heavy oil than water. Similarly, different heat transfer rates will be attained with the same liquid at different temperatures due to the variations of the physical properties with temperature.

The existence of temperature gradients at right angles to the direction of flow of the oil make it necessary to determine by study of existing data the correct average temperatures at which the physical properties are to be determined. The temperature difference between pipe inner wall and oil is assumed to occur in a very thin layer next to the wall which is referred to as the "film." When the oil is being heated or cooled the film temperature is higher or lower than the main body temperature and in order to obtain the best results, the properties should be considered at the film temperature. However, since the thermal conductivity and specific heats of oil do not vary rapidly with temperature, the data can in general be correlated as well with these two physical properties taken at the "main body" temperature of the oil—that is, at the average of the inlet and outlet temperatures. The viscosity, on the other hand, does vary rapidly with temperature and, moreover, has more effect on the heat transfer coefficients than do the others. Consequently, for the best correlation, the viscosity of the liquid at film temperature should be used.

To avoid the necessity for the involved and tedious calculations necessary to determine the film temperature in design, existing data have been examined to determine a "correction factor" to apply to the viscosity determined at the main body temperature.

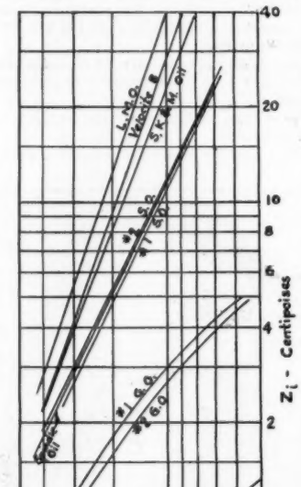



*Figure 1.—Viscosity-Temperature curves for the fluids upon which the accompanying charts are based*

### Correction Factor

Data directly applicable to the determination of the effect of film temperature on heat transfer coefficients are lacking. However, Keevil and McAdams have determined the effect of heat transmission on the friction factor for the viscous flow of oil and water in a pipe and the following development is based on those data.

Figure 1 gives the viscosity as a function of temperature for the fluids considered in three references. The steeper the viscosity-temperature curve, the more effect heating or cooling will have on the viscosity, making the film viscosity more widely separated from the body viscosity or the viscosity at the main body temperature. In other words the steeper the viscosity-temperature curve the more effect heating or cooling will have on the friction factor, since the friction factor depends on the film viscosity.

An examination of Figure 1 shows that for increasing viscosity at a certain temperature the slope increases and that for purposes of estimating a viscosity correction factor (Postulate 1), the slope of viscosity-temperature curve, "n," may be considered a function of $Z_{100}$, the viscosity at 100° F. Curve A in Figure 2 represents "n" vs. $\log_{10} Z_{100\ deg.\ F.}$ and is plotted from Figure 1. The equation for Curve A is

$$n = 1.25\ (Z_{100})^{.31} \quad . \quad . \quad . \quad . \quad . \quad (1)$$

Curve 1 of Figure 3 presents Keevil and McAdams' correction to the isothermal friction factor for heating and cooling as the ratio of the actual to the isothermal friction as a function of temperature difference between pipe and oil. The isothermal friction factor was determined using the viscosity of the oil at main body temperatures. Their curve represents an oil with a value of n of 2.3.

Letting $k_h$ and $k_c$ be the slopes of the curves 1 for heating and cooling respectively, the equations for the lines are:

$$k_h = (1 - f_h/f_i)\frac{200}{\Delta t} \quad . \quad . \quad (2h)$$

$$k_c = (f_c/f_i - 1)\frac{200}{\Delta t} \quad . \quad . \quad (2c)$$

Referring to Figures 2 and 3, when $n = o$, $k = o$ and when $n = 2.3$ as for line No. 1 in Figure 3, $k_c$ (the slope of the cooling part of the line) $= 0.63$, and $k_h$ (the slope of the heating part of the line) $= 1.5$.

Assuming a linear relationship between k and n, and using the two sets of coordinates given, Curves B and C of Figure 2 were drawn which show k as a function of n. From Figure 2, the values of $k_h$ and $k_c$ were obtained for the various oils of the different investigators by determining from $Z_{100\ deg.\ F.}$ of the particular oil, the value of n and from n, the values of $k_h$ and $k_c$. In this manner, Curves 2 to 8, inclusive, are drawn in on Figure 3 for the fluids investigated by Morris and Whitman, and Sherwood, Kiley and Mangsen.

By the following substitutions, the isothermal friction factor correction can be expressed as a function of the temperature difference and viscosity at 100° F.

From Figure 2 it follows that

$$k_h = \frac{1}{3.7}\,n \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3h)$$

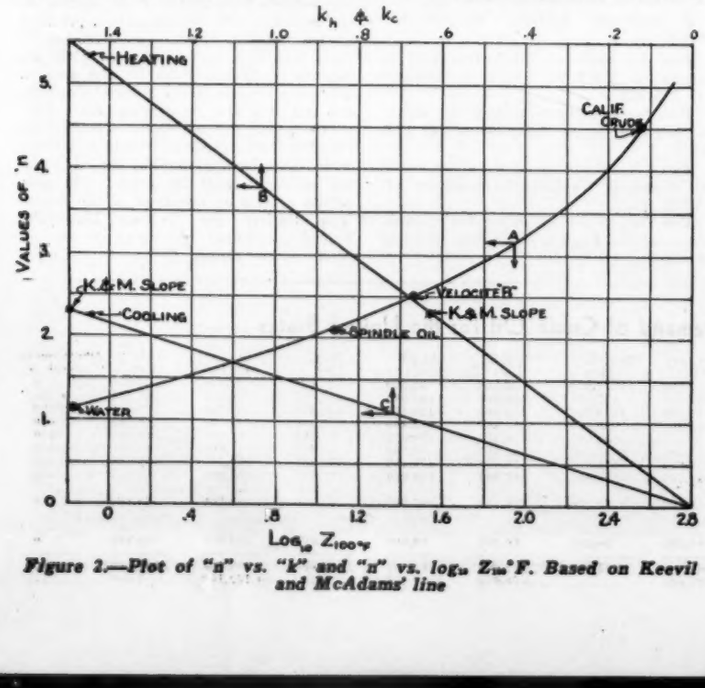



*Figure 2.—Plot of "n" vs. "k" and "n" vs. $\log_{10} Z_{100}$°F. Based on Keevil and McAdams' line*

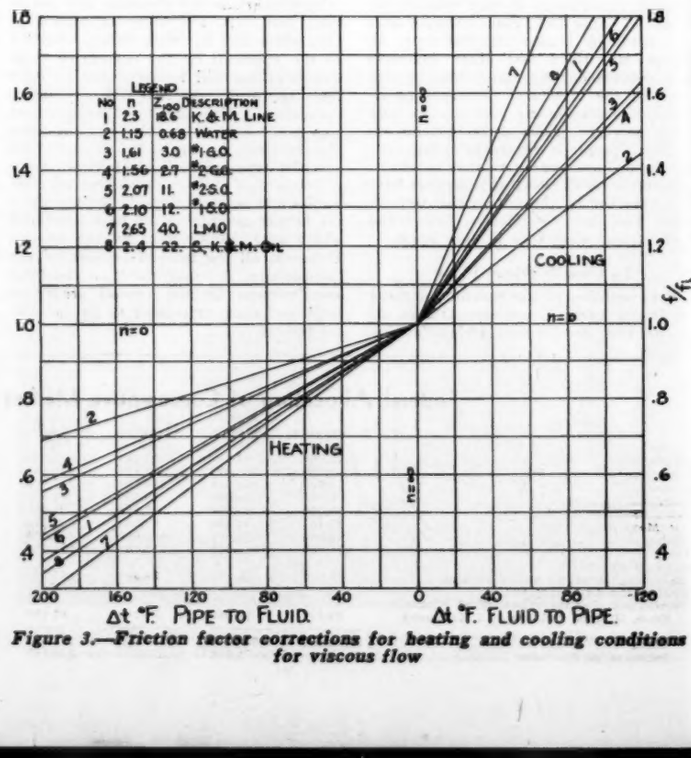



*Figure 3.—Friction factor corrections for heating and cooling conditions for viscous flow*

$$k_c = \frac{1}{1.55}\,n \quad . \quad . \quad . \quad . \quad . \quad (3c)$$

Combining Equation 1 with (3h) and (3c)

$$k_h = 0.3378\ (Z_{100})^{-.21} \quad . \quad . \quad . \quad (4h)$$

$$k_c = 0.806\ (Z_{100})^{-.21} \quad . \quad . \quad . \quad (4c)$$

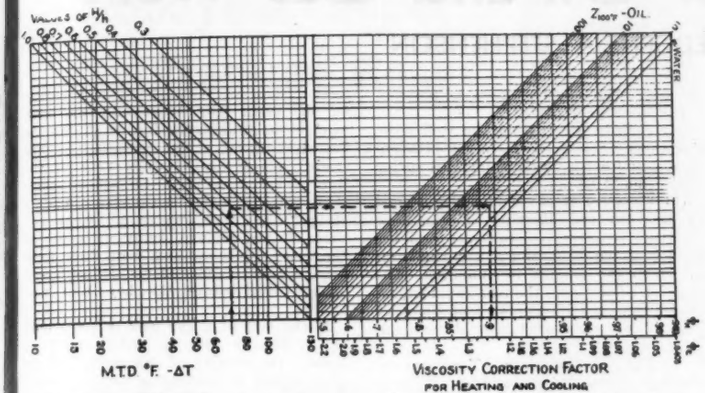



*Figure 4.—Viscosity corrections as a function of T, H/h, and $Z_{100}$°F.*

eliminating $k_h$ and $k_c$ from Equations 2 and 4

$$f_h/f_1 = 1 - 0.001689\ (Z_{100})^{-.21}\ \Delta t \ . . \ (5h)$$

$$f_c/f_1 = 1 + 0.00403\ (Z_{100})^{-.21}\ \Delta t \ . . \ (5c)$$

Equations (5h) and (5c) represent Figure 3.

In isothermal viscous flow, the friction factor is inversely proportional to the first power of the viscosity. Consequently, it is postulated that for heat transfer in viscous flow (Postulate 2), the effect on the isothermal friction factor by heating or cooling is primarily due to viscosity changes and may be allowed for by corrections applied to the viscosity. Consequently, $Z_h/Z_1$ and $Z_c/Z_1$ may be substituted for $f_h/f_1$ and $f_c/f_1$ in Equations (5h) and (5c) giving (6h) and (6c).

$$Z_h/Z_1 = 1 - 0.001689\ (Z_{100})^{-.21}\ \Delta t \ . \ (6h)$$

$$Z_c/Z_1 = 1 + 0.00403\ (Z_{100})^{-.21}\ \Delta t \ . . \ (6c)$$

where $Z_h$ and $Z_c$ refer to the film viscosities for heating and cooling, respectively.

### Turbulent Flow

Although these equations are developed from data on viscous flow, the following discussion will show that for engineering purposes, they are equally applicable to turbulent flow. It is known that for isothermal turbulent flow the friction factor varies inversely as a fractional power of the viscosity, which power ranges from 0.2 to 0.3. If, therefore, the correction for the friction factor for turbulent flow is determined by means of a viscosity correction from Equation (6h) or (6c), the correction will be smaller than for viscous flow. Experimental data indicate very clearly that this should be the case. Therefore, Equations (6h) and (6c) may be considered as valid in the turbulent flow region, as well as viscous flow region, for engineering calculations because the magnitude of the error caused by this assumption will be as small if not smaller than other inherent errors.

From $H\,\Delta T = h\Delta t$

$$\Delta t = \frac{H}{h}\Delta T$$

Substituting for $\Delta t$ in Equations (6h) and (6c)

$$Z_h = Z_1\left[1 + 0.00403\,(Z_{100})^{-.21}\frac{H}{h}\Delta T\right] \ . \ (7h)$$

$$Z_c = Z_1\left[1 + 0.00403\,(Z_{100})^{-.21}\frac{H}{h}\Delta T\right] \ . \ (7c)$$

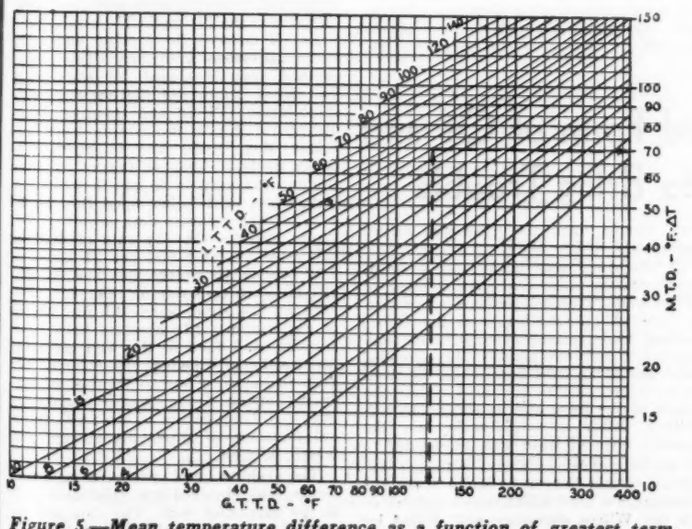



*Figure 5.—Mean temperature difference as a function of greatest terminal temperature difference and least terminal temperature difference*

Let $\phi_h$ and $\phi_c$ be the "correction factors" for the viscosities for heating and cooling, or

$$\phi_h = 1 - 0.001689\ (Z_{100})^{-.21}\frac{H}{h}\Delta T \ . \ (8h)$$

$$\phi_c = 1 + 0.00403\ (Z_{100})^{-.21}\frac{H}{h}\Delta T \ . . \ (8c)$$

Then the film viscosities are

$$Z_h = \phi_h Z_1, \text{ and } Z_c = \phi_1 Z_1$$

from which it follows that

$$\phi_h < 1 < \phi_c$$

The values of $\phi_h$ and $\phi_c$ will depend upon n, the slope of the viscosity-temperature curve (Figure 1) and upon the temperature drop across the film as well as upon the film coefficient itself. If either the slope or temperature drop are zero the values of $\phi_h$ and $\phi_c$ will be equal to 1.

Figure 4 gives graphical solutions for Equations (8h) and (8c), while Figure 5 gives the mean temperature difference (logarithmic), $\Delta T$, as a function of greatest terminal temperature difference and the least terminal temperature difference.

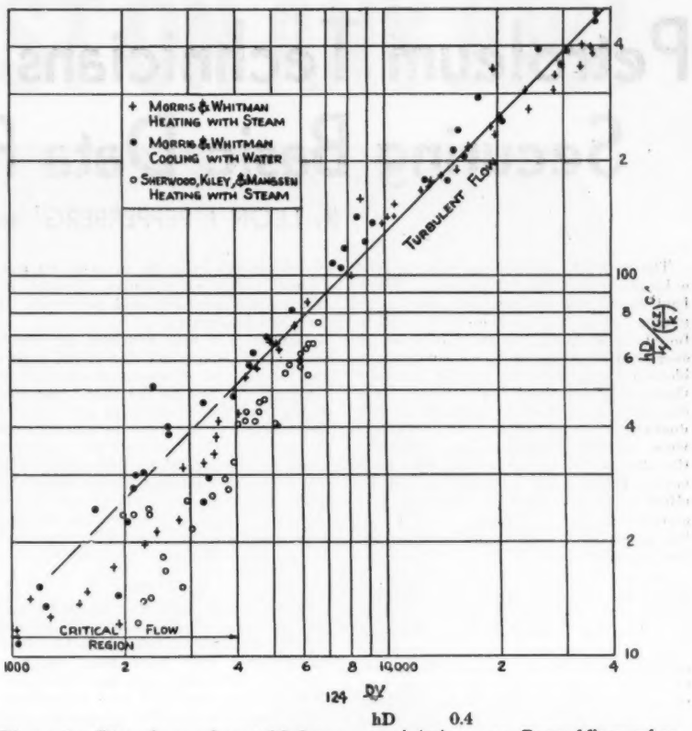

Morris & Whitman Heating with Steam
Morris & Whitman Cooling with Water
Sherwood, Kiley, & Mangsen Heating with Steam
Turbulent Flow
Critical Flow Region
124 DV/Z
hD/k / (cz/k)^0.4

*Figure 6.—Plot of experimental h data as $\frac{hD}{k} / \frac{(cz)}{(k)}^{0.4}$ vs. Reynold's number*

### Film Coefficients

Data for heating water, gas oil, straw oil and light motor oil with steam as well as data for cooling gas oil, straw oil, and light motor oil with water from Morris and Whitman, and data for heating a "light asphalt base heat transfer" oil with steam from Sherwood, Kiley and Mangsen were investigated. Using the viscosity correction factor, $\phi$, the film viscosities, Z, were found while the other properties were at main body temperature. The Nusselt number, hD/K; the Prandte number, cZ/k; and Reynolds' number, 124 DV/Z were calculated. Figure 6 is a plot of the resulting calculations. The data of Sherwood, Kiley and Mangsen is lower than that of Morris and Whitman, while points in the critical flow region are scattered. A straight line with a slope of 1 as drawn on Figure 6 approximately represents the data

(Continued on Page 42)

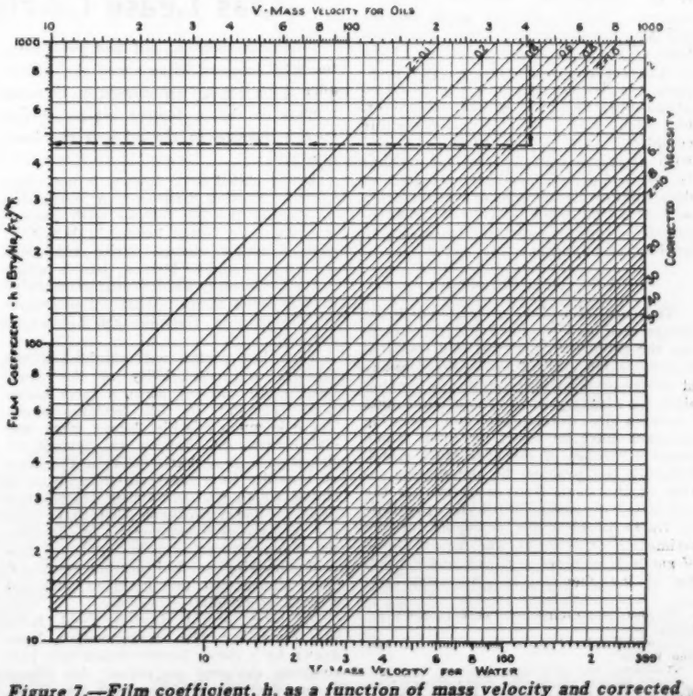



*Figure 7.—Film coefficient, h, as a function of mass velocity and corrected viscosity for water and oils (approximation).*

# Petroleum Technicians Recognize Necessity of Securing Basic Data for Oil and Gas Wells

By LEON J. PEPPERBERG[1] and EUGENE A. STEPHENSON[2*]

The natural gas industry is essentially a by-product of the oil industry. When first discovered the gas was usually regarded as a nuisance, and even when found immediately associated with oil, or suspected to be so, it was customary to blow it freely into the air, in the hope that gas would shortly be replaced by a flow of oil. The early methods of production, transportation and utilization were neither economical nor efficient; the chief value of gas was based on its use as a fuel, with no regard to (a) its effect upon the oil with which it was associated, (b) its importance as a lifting agent, or (c) to its possibilities for the manufacture of by-products.

The spread of scientific research among major gas and oil companies, manufacturers and academic groups, has gradually brought recognition of the fact that many of the technical problems bearing on production, transportation and utilization, are common to both the gas and the oil industry. A few of the problems which have received serious study, and from which highly gratifying results have been obtained are: (a) gas measurement, (b) oil well and gas well capacity tests, (c) elimination of field waste, (d) design of pipe lines and compressor stations, (e) extraction of constituents which might interfere with the normal flow of gas through the line, (f) control of reservoir pressure, (g) estimation of reserves of both oil and gas, (h) control of water encroachment, (i) measurement of factors which influence fluid movement through sands, (j) solubility of gases in oils, (k) effect of dissolved gases upon the properties of the solution. These investigations have demonstrated that almost every problem which related to oil production also involves some phase of natural gas engineering.

During the past 15 years the use of experimental methods for the discovery and measurement of obscure, influencing factors, which cannot be determined purely by hydrodynamic or thermodynamic analyses, have contributed much towards the progress made in solving the problems of the oil and gas industries. Most of the experimental work on gas problems has been limited to dry gas and unconsolidated sands in the laboratory, but other studies have been successfully completed with actual sand cores, and with wells producing oil, or gas, or both. In the case of oil associated with gas, the data obtained through experimentation with these mixtures provide valuable information which is directly applicable to production problems.

### Basic Data Necessary

The necessity for complete and accurate well and production data, including the geological, physical and chemical factors which control the characteristics of the reservoir fluids, cannot be emphasized too strongly as the foundation upon which an ideal development and operating program must be based, or upon which sound estimates of reserves must stand. Whether the problem be the determination of the open flow capacity (or the potential) of gas or oil wells, the flow of fluids through the reservoir, or the estimation of reserves, the measurement of gas will be necessary. An understanding of the chemical and physical laws governing the behavior of confined gas, oil and water, or mixtures of these, at various temperatures and pressures, is therefore imperative.

Methods are now available by which the texture, shape and size of the grains and the amount of cementing material in the rock, as well as the shape and size of the pore spaces which in part control the behavior of the fluids in contact with the minerals that compose the reservoir strata can be studied experimentally. The effect of these characteristics upon the total reservoir capacity and the quantities of oil and gas recoverable through different methods of production can also be evaluated, at least collectively.

### Well Data

In general, the information now available for any of the developed oil and gas fields lacks certain desirable data which could only have been obtained when the field was new, but whose significance may not have been realized at that time. In the light of present day research, at least the following data should be obtained and recorded for every initial productive well in every field. (Some of these can also be obtained for the dry holes.) Subsequent to discovery certain key wells should be selected from which similar data may be obtained periodically.

(a) Depth of the well; elevation of well head.

(b) Log of the well, showing casing procedure, water, gas and oil shows, and position of cement. State whether or not well was shot, or treated with acid, quantities used, results.

(c) Waters encountered; specimens should be saved, the depths recorded, and the waters analyzed as soon as possible.

(d) Sand penetration.

(e) Shut-in pressure at the well head, preferably taken with a deadweight tester; at least a newly calibrated spring gauge should be used.

(f) Capacity tests. Under this should be recorded the diameter of the flow pipe, the temperature, pressure and the gravity of the fluid, and if gas, the bases on which the volume is computed. The duration of the test, the maximum capacity, or the capacity per unit of time per unit of pressure drop should be computed.

(g) Bottom hole data. Temperature, pressure, sample of gas and/or oil taken with well shut in.

(h) Properties of reservoir fluids. A complete laboratory study should be made at once of the viscosity, surface tension, and specific gravity of the oil at reservoir temperature and pressure. The solubility of the gases, and the changes in the above physical properties of the oil which occur as gas is withdrawn from the solution should also be investigated.

(i) Gravity of the gas; chemical composition; calorimetric determination of B.t.u. value; gasoline content per M.c.f.

(j) Core samples. As many cores as possible should be preserved and tested for permeability and porosity.

Of the above, (a), (b), (c), (d) and (i) are commonly available in some form or other for most wells, and are not discussed further.

### Pressure Data

Well-head pressure data should always be supplemented with detailed information concerning the environment of the locality at the time the pressures are taken, such as: (a) The drilled density of the area. (b) Were adjacent wells within the drainage influence of the one tested "shut-in" at the time the test was made? (c) If nearby wells were "in the line" what was their casinghead pressure, what was the line pressure against which they were "working," what volume of gas/oil was being delivered at the time? (d) How long were these wells (if close by or in densely drilled area) in the line before the key well was tested?

If the test of a gas well is made during or shortly after a period of "peak loads," the results of calculations based thereon will be misleading because of the low-pressure areas which develop during such periods. Equilibrium cannot be established in large fields, or in many types of reservoirs, unless the field is shut in for several days. In some West Virginia and Kentucky gas fields months are required to build up maximum reservoir pressures after heavy winter withdrawals, consequently under normal operating conditions the most reliable reservoir pressures are obtainable only during the summer or early fall months.

If the well is wet, i.e., contains fluid, a bottom hole pressure gauge should be used, or it must be thoroughly freed from oil or water before reliable pressure tests can be made with the steam or tube gauge.

### Capacities Tests

The capacity of gas wells may be determined by the "minute pressure method," Pitot tube measurement, orifice or other meter measurement and the "back-pressure-capacity method" which is a series of metered flows taken under different pressure gradients. This latter method was developed by the U. S. Bureau of Mines and the American Gas Association (Pierce and Rawlins, U. S. Bureau of Mines, Serial Nos. 2,929 and 2,930, May, 1929) and is superior to other methods because (a) of its simplicity, (b) very little gas is wasted in comparison with other open flow methods, (c) the accurate data acquired. The latter includes the (1) rate of delivery expressed as cubic feet per 24 hours at 14.4 pounds per square inch and 60° F.; (2) absolute reservoir or "shut-in" pressure at the sand, corrected for weight of gas column; (3) absolute back pressure at sand face in the well corrected for weight of flowing gas column and drop in pressure due to friction in producing string; (4) specific gravity of gas; (5) temperature of gas; (6) internal diameter of producing string; (7) length of pipe.

The volume and pressure measurements thus obtained are applicable only to the particular well. The data can be used (1) to control deliveries at different back pressures with a nearly constant formation pressure, (2) to calculate the ability of the well to deliver definite quantities of gas to pipe lines under various working pressures, (3) by the use of assumed dimensions of the radial reservoir cross-section through which the volume of gas flows under the specific pressure gradient, it is possible to calculate roughly the effective permeability of the pay zone in the vicinity of the well, (4) the accurate pressure determinations used in this method furnish fundamental data which are a vast improvement over the usual "catch as catch can" so-called pressure determinations frequently taken for operating purposes.

These accurate pressures for individual wells, taken with the deadweight tester

(Continued on Page 31)

*Before Mid-Continent Section, A.I.M.E., Tulsa.
Author's title, "Basic Data for Oil and Gas Wells."
[1]Geologist and engineer, Dallas, Tex.
[2]Professor of petroleum engineering, Missouri School of Mines and Metallurgy, Rolla, Mo.

## Departure From Tested Form of Oil and Gas Lease Likely to Bring Trouble

Where is there an oil and gas operator who has not experienced the annoyance of having a lease messed up or made inoperative by a lawyer whose experience is foreign to the oil and gas business?

The so-called little lawyer is not alone in this messing business. A surprising number of the big fellows with impressive engraved letter heads, in behalf of their trusting clients, write ridiculous letters to would-be lessees; letters which contain the most absurd requirements so that it often happens that all procedure on the part of the operator has to be dropped.

Time has pretty well established the fairness and workability of the usual form of oil and gas lease, a form necessarily peculiar to this business alone. There is much mischief latent when special clauses or changes are introduced. Sometimes these hark back in the form of lawsuits in a most startling form. A clause which was generously placed in a lease by the writer specified that when the lessee ceased commercial production, the lessor was to have his choice of any well surviving as fuel for his residence. That clause cost the lessee $18,000 and a peck of trouble.

Operators in the Garnett Field, Kansas, remember with amusement a lease drawn by a clever lawyer which was particularly designed to protect his client. It specified that if a discovery was made, the operator was to drill a well every two months until the lease was drilled completely.

A discovery was made and adjacent lease owners started a large number of offset wells. The rock pressure was quickly lowered, but the lessee on the smart-lawyer lease refused to drill more than one offset each two months. He contended that should he drill more than one well in each two months he would violate the terms of the lease and be subject to forfeiture. After a considerable loss the regular form of lease was substituted.

At Independence, Kans., a farmer appealed to his lawyer to write a certain lease on his land which was adjacent to the big Wilcox discovery well drilled by Homer Lamb. The usual form was discarded and a typewriter called into service. The farmer, impressed, signed the lease without study of its contents. It specified that a well was to be drilled within two months or the lease became null and void. It failed to specify how deep the well was to be. There was known to be shallow gas at 400 feet. The operator could readily satisfy the lease without drilling to the deep Wilcox sand.

A little inquiry would bring to light hundreds of strange situations in lawyer-made leases and nine times out of ten these leases are detrimental to the client. The saying is: "Let an average lawyer write a lease and he will either hang his client or make the lease inoperative." The "big fellows" outside the oil and gas areas who can properly appraise a leasing situation are scarce.—T. M. G.

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# Arguments Presented Against Increasing Vapor Pressure of Motor Fuels for the Present

By T. A. BOYD
General Motors Corp.*

It has been proposed by the Section on Vapor Lock of Technical Committee A on Gasoline of the Society's Committee D-2 on Petroleum Products and Lubricants that the Reid vapor pressure limits suitable for automobile gasolines be set thus:

| Maximum atmos. temp. | V.P. at service station |
|---|---|
| For 100° F. | 8 lbs. |
| For 85° F. | 10 lbs. |
| For 75° F. | 12 lbs. |

We have expressed the belief that the Reid vapor pressures given in this proposed schedule are too high and that this is particularly true in the lower portion of the temperature range within which it is thought that a greater degree of freedom from vapor lock should be provided for than at the higher temperatures. It is for this reason that we have been asked to prepare a discussion of the matter. Following, then, are given the principal reasons for the expressed belief, as just stated, together with data upon which the opinion rests.

### Ambiguous Expression

The first of the reasons for the belief that the Reid vapor pressures proposed in the above schedule are too high arises from the ambiguity of the term "maximum atmospheric temperature." It has been suggested that, because the temperatures given in the proposed schedule are maximum temperatures, they thereby automatically include a factor of safety which is thought to arise from the fact that only on rare occasions is the maximum temperature stated actually reached. But in reality that may not be the case, because there are two respects in which the expression "maximum atmospheric temperature" is capable of a variety of interpretations. There is, first, the question about whether it means the "absolute monthly maximum," the "average monthly maximum," or the "average daily maximum" of the weather bureau, or whether it means some other form of maximum taken over a different period. There is, second, the question about whether it means temperatures as recorded by the weather bureau or those actually existing where the car is driven, or perhaps where the filling station is located. This second question becomes one of importance because, in general, weather bureau temperatures are not so high as those which actually prevail on the roads and streets where cars are driven. Furthermore, regardless of what the intention of the schedule of safe limits may be, the inference of some interpreters of it will probably be that the temperatures named there are those at which the corresponding Reid vapor pressures are suitable for universal use, and not as temperatures which should not be exceeded

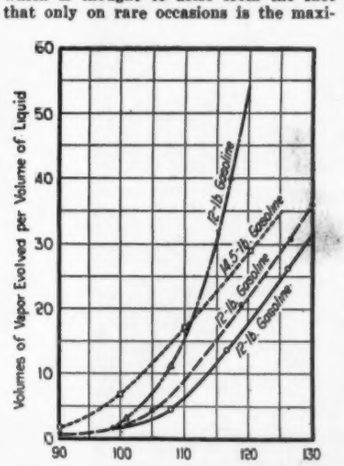


*Figure 1—Volumes of vapor evolved at different temperatures by three 12-pound gasolines and one 14.5-pound gasoline*

Chart showing that the Reid vapor pressure of a gasoline may not give a true measure of the amount of vapor which it will evolve at temperatures above 100° F.

*Before American Society for Testing Materials at meeting in Atlantic City, N. J., June 25-29.

TABLE 1—CHANGES IN THE MAXIMUM TEMPERATURE RISES IN THE FUEL SYSTEMS OF FIVE REPRESENTATIVE CARS OVER A FIVE-YEAR PERIOD, SHOWING AN AVERAGE REDUCTION OF ABOUT 15° F., WHICH CORRESPONDS IN TURN TO A BOOST OF APPROXIMATELY 2 POUNDS IN PERMISSIBLE REID VAPOR PRESSURE

| | Maximum temperature rise of fuel systems above atmospheric, for car speed of 60 m.p.h., deg. F. | | | | | |
|---|---|---|---|---|---|---|
| | 1929 Cars | | 1931 Cars | | 1934 Cars | |
| Car— | Steady driving | Idling afterwards | Steady driving | Idling afterwards | Steady driving | Idling afterwards |
| No. 1 | 29 | 67 | 37 | 65 | 25 | 38 |
| No. 2 | 45 | 61 | 50 | 69 | 42 | 55 |
| No. 3 | 57 | 81 | 52 | 67 | 27 | 48 |
| No. 4 | 58 | 85 | .. | .. | 38 | 85 |
| No. 5 | .. | .. | 44 | 66 | 31 | 60 |
| Average | 47 | 73 | 46 | 66 | 33 | 57 |

### V. P. as Measure of Vapor Locking

The second reason for believing that the proposed schedule is too liberal for the present is concerned with a fundamental limitation which Reid vapor pressure has as a measure of vapor locking tendency. The limitation referred to is that two gasolines which have the same Reid vapor pressure at 100° F. may evolve widely different volumes of vapor at the temperatures above 100° F. to which gasolines are often heated in the fuel-handling system of cars† [1]. The converse also is true, namely, that gasolines of different Reid vapor pressures may at a given temperature evolve the same volume of vapor. Thus, the data of Figure 1 show that of three gasolines all of the same Reid vapor pressure, namely, 12 pounds, one gave off by direct measurement in a displacement apparatus 18 volumes of vapor per unit volume of liquid gasoline at 120° F., a second 22 volumes, and a third over 50 volumes. In comparison with these figures, another gasoline of 14.5 pounds Reid vapor pressure evolved 29 volumes of vapor at 120° F. Bridgeman[2] has reported also that, of two gasolines which evolved the same amount of vapor at 120° F., one had a Reid vapor pressure of 11.1 pounds and the other of 13.8 pounds. Since the cause of vapor lock is vapor, it is to be expected that the two gasolines reported by Bridgeman, although differing by 2.7 pounds in Reid vapor pressure at 100° F., would be substantially alike in respect to producing vapor lock at 120° F. And experience indicates that this is so.

It should be said, however, that this discussion of the limitation of Reid vapor pressure as a measure of the tendency of a gasoline to give vapor lock is presented here not because of any belief that Reid vapor pressure does not give a useful indication of vapor-locking tendency, but because it involves an unavoidable variable which constitutes an important reason for not setting the schedule of Reid vapor pressures too high.

### Commercial Practice

The third reason for taking exception to the proposed schedule is concerned with the fact that Reid vapor pressures proposed for 85° F. and 75° F. atmospheric temperatures are distinctly higher than are found in average commercial practice. Thus, the majority of automobile gasolines sold in the winter months not only have not been approaching in Reid vapor pressure the proposed schedule, but also relatively few of them have had 12-pound Reid vapor pressures at all. This is illustrated by the following facts:

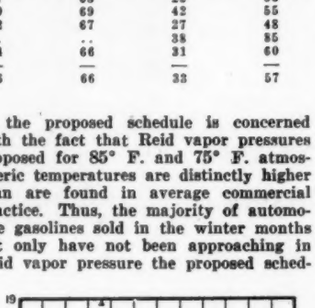


*Figure 2—Reid vapor pressure versus atmospheric temperature for vapor lock; 1931 to 1934 cars*

1. In the surveys of winter gasolines made by The Oil and Gas Journal in 1930 to 1933[3] only 1 of the 131 gasolines included had a Reid vapor pressure of 12 pounds, and the average Reid vapor pressure of the regular price gasolines collected in the 1933 survey was 9.5 pounds.

2. Among the gasolines of major distributors, as collected in Detroit in the month of February during the years of 1932 to 1934 by General Motors Research Division, only 2 out of 66 had Reid vapor pressures as high as 12 pounds. More than one-half of the regular price and premium price gasolines included in these surveys had Reid vapor pressures of 10 pounds or less.

3. Data given in the report to Technical Committee A recently by R. C. Alden[4] show that only one in eight of the winter gasolines (collected in December, January, and February) had a Reid vapor pressure as high as 12 pounds, and the average Reid vapor pressure of all the gasolines included in Alden's December to February survey in 1933 to 1934 was 10.5 pounds.

### Proposed Schedule

The fourth reason, and the most important of all, is that many cars now in use will give vapor lock on the gasolines named at the atmospheric temperatures which correspond to them in the proposed schedule. This is shown by Figure 2, which is a chart of Reid vapor pressure plotted against the atmospheric temperatures at which vapor lock has been observed in our own experience. The data represent results obtained on cars of 1931 to 1934 models, chiefly the later models, and they include cars of all price classes. The nature of the vapor lock observed in each instance is designated. The heavy solid-line curve on the chart has been drawn through the points which represent the schedule of suitable Reid vapor pressures proposed by the section on vapor lock, as given at the outset. That many of the points representing vapor lock lie within the region below this curve is apparent from the chart.

That the original data given on Figure 2 are in general agreement with the results of other investigators, as presented in the literature, is shown by the points plotted on Figure 3. Many of the published results of experimenters on vapor lock are not given in terms of atmospheric temperature but in terms of observed fuel temperature at the time, or at the point, of vapor lock. Consequently, they cannot be properly shown on a chart of atmospheric temperature, such as Figure 2. The points plotted on Figure 2 in terms of Reid vapor pressure versus atmospheric temperature for vapor lock are shown also on Figure 3 in terms of Reid vapor pressure versus observed fuel temperature at the time of vapor lock; and, in addition, are plotted results of Brown[6], of Bauer[7], of Ainsley, Baker and Phillips[8], and of Bridgeman[5]. Recognizing the unavoidable variables involved, there seems to be a fair degree of agreement among the actual vapor locking temperatures observed by the different investigators. In the main, the data of Bridgeman lie above and to the right of that of the other investigators. It is believed that the reason for this is that Bridgeman's results were for the most part obtained at speeds not exceeding 40 m.p.h.

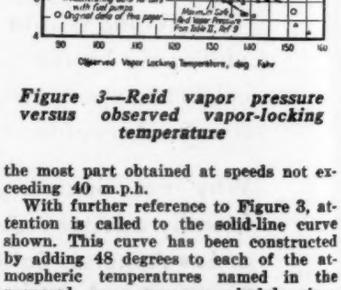


*Figure 3—Reid vapor pressure versus observed vapor-locking temperature*

With further reference to Figure 3, attention is called to the solid-line curve shown. This curve has been constructed by adding 48 degrees to each of the atmospheric temperatures named in the proposed vapor pressure schedule given above. The figure of 48 degrees is based upon the conclusion of Bridgeman[5] from his survey of the temperatures reached in the fuel systems of 1930, 1931, and 1932 cars that "in order to afford protection to more than 90 per cent of the cars on the road, a temperature rise of about 48° F. at constant speed must be assumed."

The lower or broken-line curve on Figure 3 has been drawn from the data given in an early report of the section on vapor lock as representing maximum safe Reid vapor pressure at 100° F.* And, as is apparent from the figure, this curve does come well toward the lower boundary of the points which represent observed vapor lock, when the results of

†The superior figures refer to the reports and papers given in the list of references appended to this article.

the several investigators are taken into account. Mention may be made further of the fact that, compared on the horizontal scale, the broken-line curve lies 12 to 13 degrees below the solid curve at each given Reid vapor pressure. Compared on the vertical scale, the differences between the two curves amount to about 2 pounds Reid vapor pressure.

Also the broken-line curve on Figure 3, which is in the lower portion of the band of observed vapor-locking conditions but still within it, lies about 35 degrees above the atmospheric temperatures named in the schedule of permissible Reid vapor pressures proposed by the section on vapor lock. As of interest and apparent significance in this connection, note the following further quotation from Bridgeman[8] with regard to the average temperature rise in the fuel systems of cars during constant speed driving:

"It appears therefore that during summer operation at constant speed driving under vapor-locking conditions, the temperature rise in that part of the fuel system most sensitive to vapor lock averages 34° F. above the atmospheric temperature."

Thus, on the basis of the comparison made in Figure 3 and discussed above, it appears that the original vapor lock data of Figure 2, which are presented directly in terms of the atmospheric temperatures at which vapor lock was experienced with gasolines of different Reid vapor pressures, are not out of line with those of other investigators. And the data of Figure 2 show that many of the cars now in use will give vapor lock on the gasolines conforming to the schedule proposed by the section on vapor lock.

### Alternative Suggestion

In the light of the foregoing discussion, it is believed that the basis of the atmospheric temperatures given in the schedule of suitable Reid vapor pressures should be more precisely defined as to meaning, and that the temperatures used in the schedule should bear some relation to the temperature of the air in which cars are actually run. Such a schedule would give the gasoline marketer a sound basis of vapor pressures to work to, but it would allow him a suitable degree of freedom of choice in respect to actual marketing policies to take care of the usual variations in weather conditions which occur in each specific locality. Putting the matter on this basis, it is believed that the following schedule of vapor pressures would be a suitable one:

| Temperature of air in which car is driven, deg. F. | Highest Reid vapor pressure of gasoline in fuel tank of car giving freedom from vapor lock in majority of cars on the road |
|---|---|
| 95 | 8 |
| 80 | 10 |
| 65 | 12 |

Note that the atmospheric temperatures named above are those of the air in which the car is driven, and that the Reid vapor pressures are those of the gasoline in the fuel tank of the car, or as delivered from the filling station. The figures given are thus based directly upon the actual operation of cars, and they also relate directly to the experimental data as obtained. The above schedule provides for a greater degree of freedom from vapor lock at the lower temperatures than at the high. This is thought to be desirable both because more driving is done at such temperatures and because vapor lock when it does occur at the lower temperatures is much more disturbing to drivers of cars than when it occurs on very hot days. Naturally the schedule as given would need to be modified accordingly if any other form of temperature or vapor pressure concept than that upon which it is based were introduced.

### Improvements in Cars

In stating the objections to the schedule of Reid vapor pressures proposed by the section on vapor lock, as has been done above, it should be said that the obligation and the desire of the automobile industry to make cars as free as possible from vapor lock is not lost sight of. Cars have been improved in this respect during recent years, and still further improvement can and will be made. In considering the proposed schedule, however, the guide must be in large measure the characteristics of existing cars.

The improvement which has already been made in cars from the viewpoint of freedom from vapor lock, as just mentioned, has extended in two directions: First, in the reduction of fuel temperatures at the carburetor; and, second, in the enlargement of vapor-handling capacities. The first of these which, because it prevents loss of vapor, is recognized as the more desirable of the two, is illustrated by the data of Table 1. Presented there are figures on the temperature rises in the fuel systems of the five representative cars, including all price classes, for which comparable temperature data happen to be available.

Note that over the five-year period, 1929 to 1934, the average reductions in the maximum temperatures reached by the liquid gasoline in the fuel systems of these five cars were as follows: For steady driving at 60 m.p.h., 14° F.; for idling after driving at 60 m.p.h., 16° F. These reductions in temperature are considerable, for they have been made in spite of increased engine sizes and correspondingly larger amounts of heat to be dissipated.

As an instance of the improvement which consists in enlarging vapor-handling capacities through modified design may be cited the case of one car on which there are comparative data. This car was one that when the vapor pressure of the gasoline was too high suffered from the form of vapor lock which reduced its driving speed. By a modification of design the vapor-handling capacity of this car under high-speed driving conditions was raised from less than 5 volumes of vapor per 1 volume of liquid gasoline at the point of vapor lock to 20 volumes, which latter is a very high vapor tolerance indeed to exist at the time when fuel demand is close to a maximum.

With further reference to the improvement made in cars in recent years with regard to freedom from vapor lock, attention is called to the shaded area at the lower left of Figure 2. The top and bottom boundaries of that area represent the upper and lower limits of the "recommended maximum Reid vapor pressure" at the corresponding atmospheric temperatures, as based upon the 17 informal votes of men who attended a meeting of the section on vapor Lock on June 22, 1931, at which the vote was taken.[9] Note that the upper boundary of the consensus of opinion at that time on the proper Reid vapor pressures to be specified lies below the points on the chart representing observed vapor lock on recent cars. Note further that the most optimistic votes then were, at each atmospheric temperature, for Reid vapor pressures of 2 pounds or more below the schedule now proposed by the section on vapor lock.

It is the impression of some that it would be a simple matter for the car designer to so arrange, that vapor lock could not occur on any gasoline. This impression is based upon the comparatively small temperature rise which occurs during steady driving conditions in cars having the smaller power plants. But, in this connection, mention may be made of the fact that vapor lock quite commonly occurs just following the time when the car has been standing still for a period, either with the engine idling or stopped. That this is so may be seen from the data of Figure 2, which shows that vapor lock frequently occurs when attempting to start the engine after a stop with ignition off, or else during acceleration after such a stop or after idling for a period. No matter how well protected and cooled a fuel system may be from the viewpoint of conditions prevailing while the car is moving through the air, the gasoline in the carburetor, in the fuel pump, and in the fuel lines under the hood will tend to approach the temperature which prevails under the hood when the car is standing. And that temperature is determined not only by the high temperature of the exhaust manifold, which is sometimes very hot indeed, but also by the temperature of the cooling medium which latter is usually from 140 to 180° F. The approach of the gasoline to the equilibrium temperature reached under the hood is a thing which, as experience has shown, can be retarded somewhat, but which it is very difficult to prevent.


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[1]C. K. Francis, "Method for Determining Vapor Lock," The Oil and Gas Journal, March 17, 1932, p. 22.

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[3]W. T. Ziegenhain, "Average Octane Number of the Regular Grade Gasolines Increased Sharply in Past Year," The Oil and Gas Journal, December 21, 1933, p. 8.

[4]R. C. Alden, "The Status of the Vapor Lock Problem," a report presented to Technical Committee A on Gasoline of A.S.T.M. Committee D-2 on Petroleum Products and Lubricants, March, 1934.

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[6]G. G. Brown, "The Volatility of Motor Fuels," Engineering Research Bulletin, No. 14, University of Michigan, May, 1930, p. 274.

[7]W. C. Bauer, "Vapor-Locking Tendencies of Automotive Fuel Systems," Journal, Soc. Automotive Engrs., June, 1930, p. 736.

[8]W. G. Ainsley, L. E. Baker, and E. B. Phillips, "Methods of Testing Automobiles for Potential Vapor Lock," Proceedings, Am. Petroleum Inst., Section 3, Volume 14, November, 1933, p. 22.

[9]Report of Section 3 on Vapor Lock to Technical Committee A on Gasoline of A.S.T.M. Committee D-2 on Petroleum Products and Lubricants, October 21, 1931.


# Design Improved Loop for Taking Linear Expansion of Pipe Lines in Refinery

By DANIEL IRWIN

An improved loop for taking the linear expansion of pipe lines in the refinery is shown in the accompanying diagram. This design is adapted to any service—oil, gas, steam or water. It consists of malleable iron or steel screwed fittings with short lengths of pipe; the "V" loop opens and closes with linear movement of the main pipe line. There is a rotary motion in the loop on the threads of the fittings.

The conventional pipe loop with circular segments, or with straight pipe and circular quadrants is costly, unsightly, and uncertain in operation; that is, its action under stress, both internal and external, cannot be predicted. Freiday and Ericson[1], referring to the old type of expansion loop, state: "An investigation of the trouble experienced with the standard types of bend leads to the conclusion that it is impossible to figure the stresses that are produced in a pipe line because of the distortion created in a pipe during fabrication. There was a tendency in a good many cases for the pipe bend to straighten out, producing thrusts in directions that had not been contemplated."

As a result of their investigation, they used a design of loop for high pressure and temperature steam lines of all sizes, rectangular in form, with rigid joints and the expansion of the line is taken up in the deflection of the short pieces of pipe included in the loop.

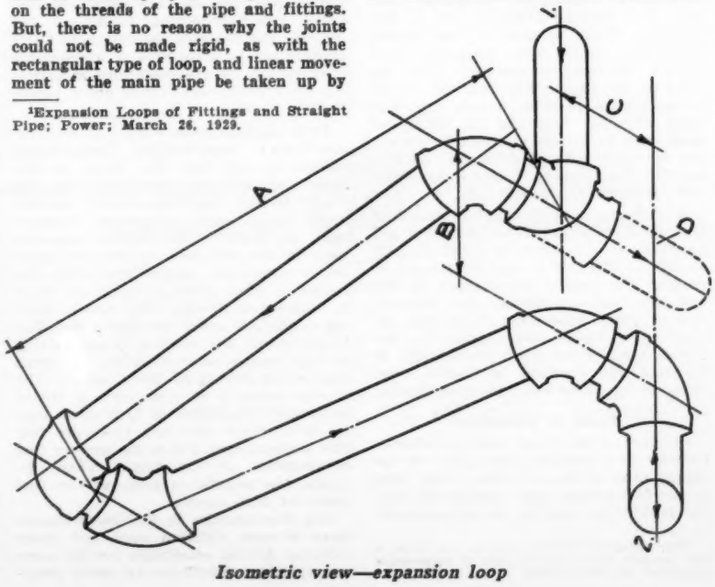
The writer has used the type of expansion loop illustrated, introducing the "V" shape instead of the rectangular one. As stated before, in this design it is contemplated that the expansion movement will be taken up by a rotary movement on the threads of the pipe and fittings. But, there is no reason why the joints could not be made rigid, as with the rectangular type of loop, and linear movement of the main pipe be taken up by deflection of the short pieces of pipe comprising the loop. With the rigid joints, allowable safe stress in the pipe must be calculated, using a factor of safety of at least 4 based on the elastic limit of the material of the pipe. With the rotating joint, the following considerations are important.

The length of the offset A may be of such dimension as allowable space and good design proportions may demand. The opening B is determined by the linear expansion of the main pipe line. The drop in the line C is not essential, as by varying the length of the nipples connecting the fittings, both 1 and 2 elevations may be the same. By substituting a tee, a drip pocket may be placed at D. Malleable iron or steel fittings should be used. Well-cut threads in both fittings and pipe are obtained by careful machine work and by choice of suitable metals; in the case of steel pipe, steel of intermediate or structural grade will give good threads. In making up, only oil should be used and the connection should be tight and leak-proof without use of any solid compounds.

Loss of static head in the short radius turns is converted to velocity head and will be recuperated to static head provided sufficient straight pipe follows the short radius bend. Loss of pressure due to friction should be less with the "V" type of expansion loop than with either the conventional or old curved loop, or with the rectangular type, the length of the flow path is less.

There are no practical limitations on the type of service, pressures and temperatures or pipe sizes for which the expansion loop may be used in the refinery.

[1]Expansion Loops of Fittings and Straight Pipe; Power; March 28, 1929.




*Isometric view—expansion loop*

# Proper Design of Car Would Permit Suggested Increase in the Motor Fuel Vapor Pressure

By GEORGE GRANGER BROWN
University of Michigan*

Vaporization of the gasoline in fuel lines, pumps or carburetor passages designed to carry and meter liquid fuel restricts the normal flow of fuel. Vapor lock is said to occur when this restriction in flow of fuel is sufficiently pronounced to interfere with the normal operation of the motor. In severe cases the motor may cease functioning entirely.

The cause of vapor lock in motor cars is primarily the overheating of fuel lines, pumps and carburetors. If the fuel were not heated in its flow to the corburetor above its temperature in the supply tank on the vehicle there would be no vapor lock. Unfortunately this most desirable condition does not exist and the vaporizing tendency or vapor pressure of the fuel as it becomes heated to high temperatures in the fuel lines of the vehicle must be limited according to the vapor-handling capacities and temperatures of these fuel systems if vapor lock is to be prevented.

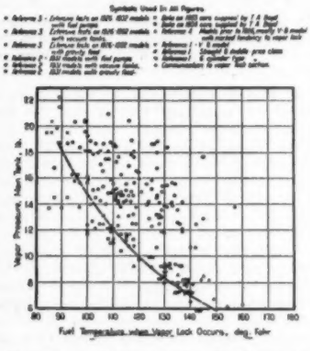



*Figure 1—Data on the Reid vapor pressure at 100° F. of the fuel in the main tank of the car, and the fuel-line temperature at point of vapor lock. Both sample of fuel and fuel-line temperature taken at time of vapor lock*

Vapor lock has been recognized for many years and carefully studied during the past eight years by numerous investigators with the accumulation of rather complete data on the vapor-locking characteristics of the cars now on the road. On July 18, 1930, the section on vapor lock, of Technical Committee A of the Society's Committee D-2 on Petroleum Products and Lubricants was appointed "to ascertain by engine test data what quality in gasoline is necessary to give reasonable protection to the user so far as the fuel is concerned; then to specify the method by which this quality should be determined in inspection test, and finally, to set the proper limits to be included in specifications for gasoline."

The data plotted in the accompanying figures were collected for this committee from published work, and unpublished data reported to and obtained by members of the section on vapor lock. It is believed that all available reliable engine data on vapor lock are included.

### Vapor Pressure Test

Careful consideration of the various tests available indicated that the Tentative Method of Test for Vapor Pressure of Natural Gasoline (Reid Method) (D 323—32 T)[1] appeared to be the most satisfactory method for determining the vaporizing tendency of gasoline to give reasonable protection to the user so far as the fuel is concerned. Because of the different characteristics of the fuel systems of different cars, some systems being able to handle much greater volumes of vapor than others, and to the differences in operating conditions encountered in actual use, it cannot be expected that any test will accurately indicate the temperature at which a fuel may cause vapor lock on all cars. The data plotted in Figure 1 include all the available data†[1 2 4] taken under actual operating conditions and indicate a reasonably satisfactory agreement between the Reid vapor pressure at 100° F. of the gasoline in the supply tank of the car and the fuel temperature at which vapor lock is observed. A table showing symbols used in all figures is included, preceding Figure 1.

The dashed line shown in Figure 1 indicates the approximate temperature at which the gasoline would exert a Reid vapor pressure of 14.7 pounds when having a Reid vapor pressure at 100° F. as indicated along the ordinate. In general it may be said that vapor lock might be expected whenever the temperature of the fuel is raised to such a degree that the Reid vapor pressure at that temperature exceeds atmospheric pressure. Practically all of the test data reported in Figure 1 were obtained with atmospheric pressures somewhat less than 14.7 pounds, although run at low altitudes. Even so most of the points, particularly those taken from the most careful and complete surveys[2], lie to the right of the dashed line because of loss in vapor pressure between main tank and point of vapor lock and the ability of most cars to handle appreciable quantities of vapor without difficulty, indicating that the above statement is conservative in being on the safe side.

Any errors or carelessness in sampling tend to show a low vapor pressure and would make the point lie lower than it should in Figures 1 and 3. Errors in reading the proper temperature in the fuel line such as reading the temperature of pump inlet when vapor lock occurs at a higher temperature in the pump, misplace the point horizontally in Figure 1 and vertically in Figure 2 but introduce no direct error in other figures.

### Point of Sampling

Changes in the vapor pressure characteristics of a gasoline take place in the supply tank of the car after filling, and in the fuel system after leaving the supply tank[1 2 4] as well as in shipments of motor fuel from the refinery to the service station. For these reasons the most logical place to sample the gasoline for determining its vapor pressure to insure reasonable freedom from vapor lock is at a point nearest the ultimate consumption. It is impractical to attempt to sample the gasoline for specification purposes after it is delivered into the supply tank of the ultimate consumer. The closest practical approach to the point of ultimate consumption is the gasoline as delivered from the pump at the service station, and this is the point which has been recommended by the section on vapor lock as the proper point for sampling motor fuel for Reid vapor pressure determination.

### Basis for Recommended Limits

Although the data plotted in Figure 1 might lead to recommendations limiting Reid vapor pressures according to the temperature to which the fuel is heated in the fuel system of the motor car, such recommendations are of little practical use as only those who have investigated the vapor-lock problem have definite ideas as to the temperatures reached in the fuel system.

The data plotted in Figure 2 give the observed fuel temperature under conditions at which vapor lock was observed for different atmospheric temperatures and for different operating conditions. The inverted pyramids[1] and the modified circles and crosses[2] are data obtained under nonvapor-locking conditions but indicate the observed maximum fuel line temperature as a function of atmospheric temperature for the conditions indicated. All other points were taken under vapor-locking conditions.

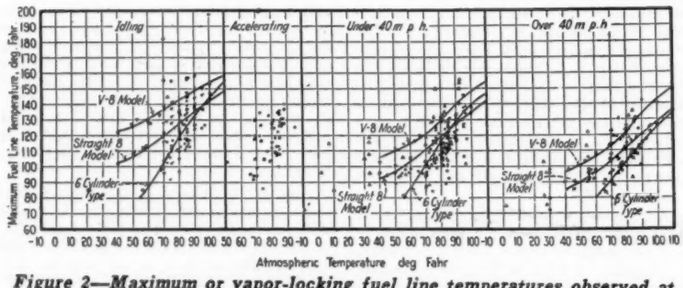



*Figure 2—Maximum or vapor-locking fuel line temperatures observed at different atmospheric temperatures when idling motor after driving, accelerating after idling, driving at constant speeds not exceeding 40 m.p.h. and driving at constant speeds exceeding 40 m.p.h.*

It is obvious from Figure 2 that the critical vapor-locking temperatures reached in the fuel line, pump or carburetor on different cars and under different driving conditions vary over wide limits for the same atmospheric temperature. In general, the highest temperatures in the fuel lines are reached under idling conditions, particularly when the engine is idled after a period of heavy or high-speed driving. For steady driving conditions lower maximum fuel line temperatures are reached when driving at high speeds, over 40 miles per hour, than when driving at lower speeds. The greater tendency of some cars to vapor-lock under conditions of high-speed driving is therefore due, not to higher fuel line temperatures, but to the greater fuel requirements of the engine which decrease the reserve capacity of the fuel pump at high speeds.

The discrepancies in fuel-line temperatures between different cars, and under different driving conditions, for the same atmospheric temperature are much greater than those indicated between the Reid vapor pressure at 100° F. and fuel temperature at which vapor lock occurs, as given in Figure 1, indicating that the accuracy or suitability of the Reid vapor pressure test as a basis of specification to insure reasonable freedom from vapor lock is much better than the agreement between the different cars on the road.

The data plotted in Figure 3 include all the available data obtained in actual engine tests under conditions of actual operation and under vapor-locking conditions, giving the vapor pressure at 100° F. of the fuel in the supply tank of the car at the time of vapor lock as observed under the indicated operating conditions and atmospheric temperature. The dashed line corresponds to the maximum Reid vapor pressure at 100° F. of the gasoline as delivered from the pump at the service station as recommended by the section on vapor lock to insure reasonable freedom from vapor lock so far as the fuel is concerned. In interpreting these data, it is clear that the recommended limits would insure freedom from vapor lock under the maximum atmospheric temperature and operating conditions indicated, in those cars represented by the points above and to the right of the dashed line.

Points computed on the basis of maximum fuel-line temperature observed under nonvapor-locking conditions combined with data obtained on independent tests as to the vapor pressure at 100° F. which will cause vapor lock at these maximum fuel-line temperatures, have not been included in Figure 3, as it has been found that data computed in this manner do not agree with actual road test data taken under vapor-locking conditions[3 4].

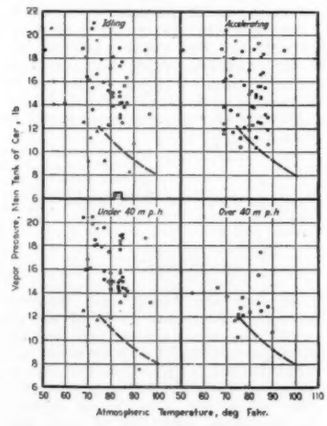



*Figure 3—Observed Reid vapor pressure at 100° F. of fuel in main tank of car at time of vapor lock as related to atmospheric temperature when idling motor after driving, accelerating after idling, driving at constant speeds not exceeding 40 m.p.h., and driving at constant speeds exceeding 40 m.p.h.*

### Idling Conditions

All of the data points located below and to the left of the dashed line in the idling section of Figure 3 were taken from the work of Brown[4] and were obtained on an 8-cylinder, V-type motor,

(Continued on Page 30)

*Presented before American Society for Testing Materials at meeting at Atlantic City, N. J., June 25-29.

[1]Proceedings, Am. Soc. Testing Mats., Vol. 32 Part 1, p. 785 (1932); also 1933 Book of A.S.T.M. Tentative Standards, p. 569.

†The superior figures refer to the reports and papers given in the list of references appended to this article.

# *Fun—and Profit*

Motorists buy gasoline either for fun or for business They want instant starting, flashing pick-up—no knocking, no trouble

Dubbscracked gasoline gives them all that—and more miles per gallon besides

Industrial users never buy fuel oil for fun—always for business It's all dollars and cents with them

Yet they pay a premium for Dubbscracked fuel oil—they never get enough

More heat units per barrel than ordinary fuel oil—that's why

That means more heat units per dollar because they pay for it by the barrel

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

# NEWS FROM FOREIGN LANDS

## GREAT BRITAIN

Sir John Cadman, G.C.M.G., chairman, at the meeting of the Anglo-Persian Oil Co., Ltd., reported that the volume of sales increased, but prices remained at a low level. In the United Kingdom, the principal market, the arrangements made with the Royal Dutch-Shell group for joint marketing had proved highly beneficial. The task of uniting two separate organizations, each of a detailed character, involved much thought and sustained effort. Today the new company was running efficiently. Moreover, it was giving excellent service to the public at a substantial reduction in the cost of distribution. He was sure they would like him to take this opportunity of congratulating all those concerned with Shell-Mex and B.P., Ltd., on the fine work that had been accomplished. In certain areas, increasing sales appeared to reflect the signs of a slight improvement in general trade conditions.

Petroleum products continued to be very heavily taxed. In the United Kingdom, the import duty on motor spirit represented approximately half its retail price. Put in another way, the duty was equivalent to the extraordinary high figure of twice the landed value of the product. The import duty on fuel oil—a penny per gallon—was equivalent to over £1 a ton and had been responsible for an increase in prices to the consumer of about one-third. Taxation of this order seriously interfered with the free flow of commodities. With no taxation, or with reduced amounts, the company's sales would inevitably increase—not by making inroads into the markets for other fuel, but by reason of the new outlets which would be opened. That increase, in turn, and the development of those outlets would provide further impulses towards a return to national prosperity, since every additional commodity movement and every demand for new manufacture swelled the volume of national trade and increased the national income.

## U. S. S. R.

A correspondent of London Oil News writes from Moscow: Coincident with the publication of Soviet statistics on oil production for first four months of this year, which amounted to 7,801,000 tons, it became known here that a commission of Soviet industrial executives and engineers has arrived in the United States to investigate market conditions there for purchasing of equipment.

As was pointed out recently, Moscow authorities are anxious to increase output, which is holding its old level principally because new gushers have been tapped in the Asneft (Baku) fields. Internal demands have risen with the continuous rise in automobile and tractor production, necessitating an expansion of domestic facilities for cracking and refining. Therefore, the Soviet industry began laying plans early this year to buy in the United States large quantities of drilling machinery, pumps and equipment for an entire cracking plant and for a number of refineries.

Soviet authorities would like to build this equipment at home, but it would have been difficult to get sufficient metal, and, even if this were obtained, it was believed that the needs of the oil industry were not enough to keep the entire Soviet equipment-building industries busy for more than a year. This was not possible, as other projects were previously scheduled for machine-building industries, so that plans for a visit to America resulted.

Uncertainty regarding the working of the Johnson law on foreign credits on Soviet financing in the United States recently almost deterred the commission from leaving, and even now it is believed the law will greatly restrict placing of Soviet orders for petroleum machinery in America.

The Russian oil export organization has made a contract with the French navy for petrol. Hitherto Russian contracts with the navy have been for fuel oil. The quantity and price in the new contract are not stated.

## BELGIUM

Five refineries are now in operation in Belgium. The most important, the Belgo Petroleum, is situated in Terdonck-Ghent and has a capacity of 30,000 tons per year. This plant is controlled by the oil importers and works under full capacity on South American or Dutch India rich crudes which are topped and cracked in a Jenkins still. By-products like gas oil and fuel oil are of good quality and have an easy market, fuel oil is sold especially for bunkering purposes in Ghent and Antwerp, where a good price can be obtained. Next in importance is the British Lianosoff plant in Antwerp, an independent group, which treats Mexican crudes. This company has contracts for export for asphalt and fuel oil, the small percentage of gasoline contained in the crude is topped and sold after blending.

Smaller plants in Antwerp are Atlas and Raffineries et Distilleries Anversoises and in Ghent, Belgian Cracking Co. A Rumanian group, Redeventza, is building now an important refinery in Antwerp.

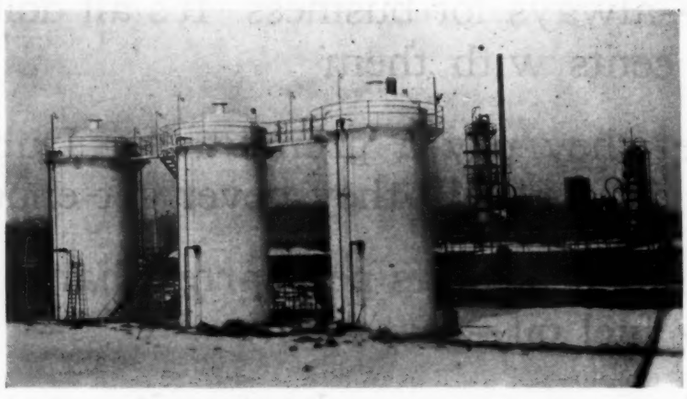
All these refineries have been established with the encouragement of the Belgian government which allows crude oil for local refining to enter duty free. On the other hand finished products like gasoline, kerosene, gas and fuel oil have to pay very high duties when imported. Same products, produced by local refining, have smaller manufacturing taxes to pay when the products are sold in the country and are totally free when exported. This protection, resulting as the difference between the import duty and manufacturing tax, is important for gasoline, as shown by the following table.

| | Import duty | Mfg. tax | Protection resulting |
|---|---|---|---|
| Gasoline (franc/liter). | 1.375 | 0.915 | 0.46 |
| Kerosene (franc/liter) | 1.125 | 0.80 | 0.325 |
| Gas oil (franc/kg.) .. | 0.10 | exempt | 0.10 |
| Fuel oil (franc/kg.) .. | 0.10 | exempt | 0.10 |

For gasoline this protection is 0.46 francs per liter (8 cents per gallon). This is superior to the present price of gasoline c.i.f. Antwerp which is now 5½ cents per gallon.

A big future is open to refineries in Belgium not only on account of this important premium but also for the big market facilities.

Belgium, outside of being an important consumer by itself, is also a distributing point for products for Holland, western Germany, Luxemburg, Switzerland, northern France and Strasburg. This entire region is connected by a vast system of waterways and canals affording cheap and convenient method of transportation.



*Belgo—Petroleum refinery, Terdonck-Ghent, Belgium*

## JAPAN

Soviet gasoline is forcing down the oil market. During the past six months not a single company has lost less than 5 sen a gallon, says a Tokio correspondent of the Wall Street Journal. Prospecting has dwindled and the old wells are being pumped out. Output in Japan proper and Formosa fell from 241,525 tons in 1932 to 205,105 tons in 1933. Even navy-aided North Saghalien crude output slipped from 287,000 tons in 1932 to 150,000 tons in 1933.

At the recent session of the Diet the government obtained a law permitting the ministry of commerce and industry to control oil. The basic law does not allow the government to set minimum prices, merely maximums. Thus, Soviet oil will remain in position to wreck the domestic industry. The law says nothing about quality, which has made price agreements difficult in the past.

One company, for example, has been turning out gasoline with an endpoint of 450, with most of the others at 400. It has had to sell on a price basis. The industry had hoped that the government would set a minimum basic standard for quality.

One provision in the law is unlikely to be enforced at the moment. It would force all oil companies in Japan to carry six months' stocks in storage. The companies have been losing so much money they are not in position to build the tankage, let alone carry interest charges on the oil. And they will not be in position unless the government alters its present stand with regard to minimum prices and forces the Russian oil importers to fall into line. Building of storage alone would cost Nippon Oil y. 10,000,000, Ogura Oil y. 5,000,000 and Mitsubishi Oil y. 2,000,000.

Until last year the six-company gasoline syndicate practically controlled the market, subject only to a slight amount of supervision from the ministry of commerce and industry, which once or twice stepped in and vetoed price boosts. The syndicate includes Nippon Oil, Socony-Vacuum, Rising Sun Petroleum (subsidiary of Royal Dutch-Shell), Ogura Oil, Mitsubishi Oil and the Mitsui Bussan Kaisha, which distributes for General Petroleum. Now there is a seventh factor in the field, the Nisso-Matsukata Oil Office, allied with the Soviet Trade Representation in Tokyo.

In 1932 Mr. Kojiro Matsukata, former president of the Kawasaki Dockyard Co., visited Moscow and signed a contract to import Soviet gasoline. Arrivals commenced early last summer.

The desire of the military ministries for large stores of petroleum products is evident in the storage provisions of the new law. The ministries want lots of gasoline and they want cheap gasoline. Therefore the ministry of commerce and industry, which had shown some disposition to control the refiners, has paid little attention to the underselling which is all but ruining the domestic industry.

When Russian gasoline appeared, the syndicate agreement was about to expire. The members decided not to renew, but to compete on a price basis. The ministry refused to allow this, ordering the cartel to continue. Prices have been breaking steadily since the end of last July. By October they had fallen from 44 sen to 35 sen a gallon. Now the retail price is 33 sen, a shade below 10 cents.

Until the closing months of 1933 the syndicate members believed that they might be able to beat the Russians. The two foreign companies (Socony and Shell) believed the sufferings of Nippon and Ogura might force the government to step in and end the trouble, since the foreigners could stand the gaff and the two Japanese leaders could not. But at the end of the year a compromise was scught.

First, the Nisso-Matsukata organization (with Soviet trade officers sitting in on the conversations) was offered a monthly quota equal to its average sales up to that time. This was refused. Then it was offered a quota equivalent to its best month (about 70,000 units). Finally, at the end of May, 1934, it was offered 90,000 units a month. It countered with a demand for 150,000 units. On May 31 Commerce Minister Joji Matsumoto called the oil men into conference and told them they would have to take some action. The statement was interpreted as a warning to the syndicate companies that they will have to meet the Russian demands, giving up further parts of their own quotas.

The forced continuance of the syndicate, with the compulsion upon each company to sell its quota or lose it, has practically tied the hands of the companies which were in the field before the Russians arrived. They could not cut down supplies to the market to hold up the price.

## ALBANIA

The Anglo-Persian Oil Co. states that formal notice of abandonment has been given of the concession held in Albania as there appeared to be no prospect of working it profitably.

### SUEZ SHIPMENTS

At the annual meeting of the Suez Canal Co. the Marquis de Vogue, the president, said, "In the south-to-north direction nearly all the important products show an appreciable increase over the preceding year. First among the principal items in the traffic are mineral oils, the shipments of which, larger than ever, total 4,933,000 tons, an advance of 1,110,000 tons; exports from the East Indies have more than trebled, but petroleum from the Persian Gulf still preponderates."

# Alone

## TRANSIT

1200 H. P. Gas Engines
*STAND ALONE*

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# THE OIL AND GAS JOURNAL

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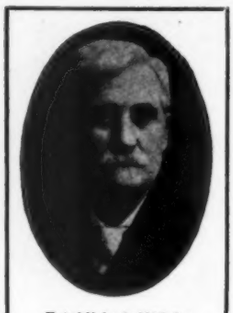

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## An Empty Gesture

The fact that the Texas Railroad Commission has reduced its allowable 36,000 barrels below the Federal allocation during July is an empty gesture when East Texas is overproducing 60,000 barrels.

More disquieting is the stress laid upon the reduction being for only 30 days, the implication being it can be boosted a month hence.

So far as that goes the industry has long ago given up hope of constructive results from the Texas Commission as at present constituted. We must look elsewhere for relief.

Much more dependence is being placed upon the efforts to secure a refining agreement in East Texas, taking surplus gasoline off the market provided excess crude production is curtailed.

The progress reported in obtaining signatures is encouraging although in view of the record every allowance must be made for the ingenuity of tricksters.

The only basis upon which an agreement that can last can be reached is one of absolute fairness and frankness on all sides. Unless good faith can be established nothing can come of it.

East Texas should be shown that it can make money this season by sustaining rather than breaking the market. Unless the situation there is stabilized, considering the failure of crude regulation, hot oil producers and all may find the house falling about them and all hopes of quick profits buried in the ruins.

Of course there will be a fringe of outlaws who will not come into any agreement but there should be enough signers to command the situation, especially with the prospect that the Federal authorities will eventually take care of the outlaw element through the revenue law or otherwise.

During the week there was increasing confidence in the probability of maintaining the market during the summer. But the industry should be looking beyond that.

The coming visit of the House Investigating Committee has been preceded by five pertinent queries addressed to Texas companies and individuals by Representative Dies, its counsel.

These questions should be answered voluntarily by all companies and individuals in the industry so the committee may have a comprehensive reply:

They are: Whether there is an excessive supply of crude and products? Everybody knows there is.

Whether such excess has the effect of rendering unprofitable the operation of wells of small and settled production and will cause their abandonment? The record shows this.

Whether premature extraction, induced by absence of restrictions on the quantity moved in commerce, results in waste and inferior uses? The present condition of the industry is sufficient answer.

Whether restrictions should be placed on movement in commerce when an excess supply exists and whether such restrictions should regulate commerce between the states with equitable apportionment among the states and among operators and sources of supply?

Whether commerce may be regarded in establishing quotas as a unit whether interstate or intrastate, export or import?

This questionnaire indicates very clearly what the House Investigating Committee has in mind in framing a bill for control of the petroleum industry next winter.

Success of the refining agreement in East Texas, following that of California, would go a long way toward showing it is unnecessary to extend Federal control beyond the limits approved by the industry.

## California's Experiment

California's experiment in stabilization which began July 1 was launched with high hopes, shared even by those who had been most cynical. The fact that the new agreement was signed by every Pacific Coast refiner except one seems incredible in view of the savagely competitive wars that have ravaged the West.

The easy supposition that some must have signed the agreement with tongue in cheek is disproved by lack of any gain by pretense and by the record of hard-boiled individualism which has broken down every attempt at co-operation in California.

The assumption must be, and it is supported by the views of observers on the spot, that this agreement has been signed in good faith and with sincere hopes it will work to the advantage of all.

If it is, it is a triumph for common sense never matched elsewhere in the oil business.

Years of unrestricted competition carried to the most reckless pitch had resulted only in the demoralization of the market for petroleum and its products. Each new competitive device was surpassed by another which was beaten by the next, all at the expense of the competitors engaged in this senseless rivalry.

Naturally the smaller competitors in this matching of losses must come to the end of their rope first but they lived only from day to day. If they had ever stopped to figure where they were coming out in the long run they would have foreseen their finish.

But until the Federal code was proposed permitting co-operation against abuses the industry made no progress. The first attempt, the cartel, was ruled out by the Department of Justice which subsequently has taken a constructive course and assisted in clearing the legal ground for the present agreement.

The stipulation not to produce, buy or utilize crude in excess of the Federal allowable and not to sell oil or gasoline of the same quality under different brands at radically different prices is fundamental if there is to be any stabilization worth while.

Administration of the agreement is placed with the Pacific Coast Petroleum Agency, representing all interests, which is also charged with the distribution of crude and providing for the absorption and distribution of any excess production of gasoline by independent refiners.

The agency is managed by a board of governors representing the member companies and Administrator Ickes who will also name a board of three persons outside the oil industry to watch the operation of the agreement and hear complaints.

This set-up is so fair all around, to all parties in the industry and for the protection of the consumer, that it may provide a long needed convincing demonstration of the folly of jungle competition and the lasting benefits of genuine co-operation.

# TWO *Important Questions* DEFINITELY ANSWERED

**1** *Can* DRESSER COUPLINGS *be* SIMPLY, QUICKLY, ECONOMICALLY INSTALLED?

*Yes*, because of absolute uniformity in size and simplicity of design. Dresser "factory-made" joints can be installed in the field by inexperienced labor—even under conditions where it is difficult, and sometimes impossible, to make other types of joints.

**2** *Will* DRESSER COUPLINGS *be* TIGHT UNDER ALL CONDITIONS, INITIALLY, AND 50 YEARS LATER?

*Yes*, experience has proved this point. The first Dresser line, laid nearly fifty years ago, is still in service . . . all the joints are perfectly tight and have required no attention. All subsequent Dresser installations have similar records of performance.

For nearly half a century, Dresser Couplings have established the Gas industry's standards for a simple, flexible, durable joint. Today more than 100,000 miles of steel and cast-iron pipe is Dresser Coupled. No other joint has an equivalent record of service.

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# DRESSER COUPLINGS *DOMINATE!*

# Dubious Outlook Presented in Group 3 Territory as Efforts Are Made to Stabilize Markets

By T. F. SMILEY

A dubious outlook was presented this week in the Oklahoma (Group 3) motor fuel and natural gasoline markets, each of which was the subject of an intensive study with a view of remedying disordered conditions. In the refinery gasoline division hope was expressed that plans being worked out would avert threatened demoralization. In the natural gasoline division the preliminaries only of a stabilization program were under discussion. There were virtually no price changes in either group of products.

The fortunes of the straightrun gasoline market were regarded as bound up with the movement initiated by the petroleum administration looking to removal of excessive stocks in East Texas through purchase by major companies under a standard form of contract approved by Administrator Ickes.

From Tyler, Tex., where meetings of those directly concerned were being held early this week under the direction of Howard Bennette, national co-ordinator of refinery operations, reports came to the effect that adoption of the purchasing plan seemed probable.

### More Signatures Needed

East Texas refiners, major companies and the petroleum administration were represented at the meetings. Agreement of 85 per cent of the East Texas refiners (figured on refining capacity) must be obtained before the plan can be made effective, it was said. Jules Constantin, head of the East Texas Independent Refiners Association, said Tuesday that 78 per cent had accepted the agreement and it was hoped refiners, chiefly in the Gladewater area, who had not done so would enter it before the end of the week.

The contract under which distress gasoline is to be taken off the hands of East Texas refiners provides that the refiner must not make any more gasoline than is permitted under his allowable set by the Planning and Coordination Committee and that he will neither produce, transport nor process any hot oil.

A stipulation of the contract at which many of the East Texas refiners are said to have balked is the one relating to payments. This clause provides that payments shall be made 75 per cent cash upon shipment, 12½ per cent in 45 days and the remaining 12½ per cent in 90 days, these deferred payments being conditioned upon faithful performance by the refiner of all the contract's provisions. Some refiners have expressed resentment over this part of the contract, asserting that it "presumes they are crooks."

Slow jobber buying this week was attributed to lack of confidence in the ability of the market to hold even its current low level of prices.

### Critical Period Predicted

Some market observers, while disposed to believe that a profitable level of gasoline prices will be maintained throughout the season of heaviest consumption now under way, predict that a critical period will be encountered in the fall and that thorough co-operation of Texas authorities with the Federal Government will be required to avoid a market collapse. If the Washington-sponsored plan of controlling the output and prices of East Texas gasoline produces satisfactory results during the present summer these observers say they expect the task of preserving the price structure thus built up to be turned over to the Texas Railroad Commission and the governor's office with the warning that unless vigorous enforcement of regulations is continued the chaotic conditions of 1931, with 10-cent crude, may be expected to return.

### No Natural Gasoline Plan Announced

The natural gasoline trade had hoped that some definite plan for stabilization of its market would be announced following the conference in New York last week of a committee of leading natural gasoline men and a committee of major oil refining company executives appointed by Judge A. L. Beaty, chairman of the P. and C. Committee. The conference adjourned, however, without formulating any specific program. The committees are to continue their study of the situation, however, and it was intimated that before long a plan for the permanent orderly distribution of natural gasoline would be submitted for approval.

According to one report Howard Bennette, national co-ordinator, will turn his attention to the natural gasoline dilemma as soon as he is able to drop his present task of directing efforts to solve the refinery gasoline problem in East Texas. It is believed an important stride toward a stabilized natural gasoline market designed to carry it over the periods of slack demand would be substitution of contract buying for the spot buying which now prevails.

### Comments Differ

The movement launched recently by which independent natural gasoline manufacturers placed themselves in competition with gasoline refiners through making 10-pound motor fuel and selling it direct to jobbers was the subject of contrasting comments this week. Some manufacturers reported that their business in this material had grown to satisfying proportions while others saw little like-

(Continued on Page 28)

## Refined Oil Market Barometer

With the season of heaviest motor fuel consumption under way, market analysts were trying without much success to forecast the likelihood of a profitable level of prices being maintained during this important period. Programs looking to stabilization were being worked out in both the straightrun and natural gasoline divisions with outcomes in doubt. Other products were showing the expected results of seasonal influences.

**Mid-Continent**—Straightrun and natural gasoline markets lacking vigor. Lubricants slowing up.

**East Coast**—Spot trading in most products dull, with no important price changes.

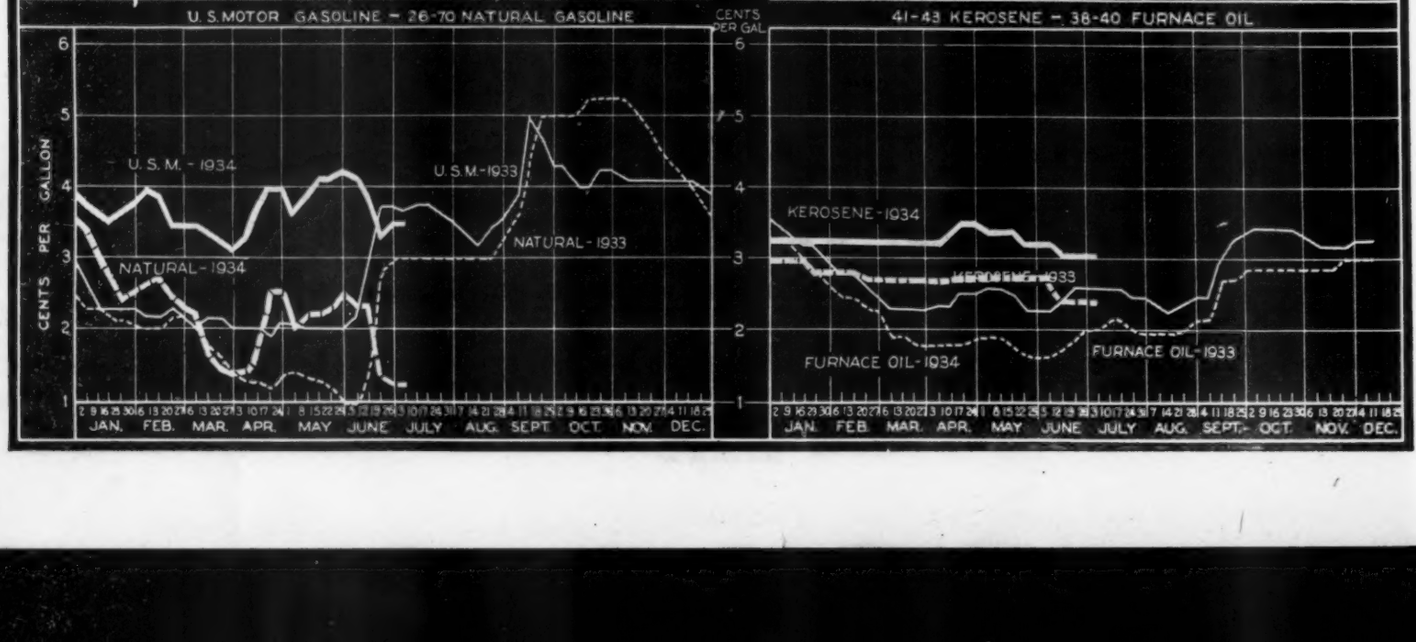
**Gulf Coast**—All markets quiet, with no price changes.

**Pennsylvania**—Market generally weak, neutrals alone maintaining strength. Bright and cylinder stocks recede.

**California**—Refinery gasoline and natural gasoline stronger, with higher prices. Little change in other products.

**Chicago**—Gasoline quiet, kerosene dull, distillates easy, fuels firm, naphthas steady.

## Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



# Eastern Refiners and Marketers Look Westward for Indications as to Summer Price Trend

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, July 2.—A new month of trading for the eastern part of the United States opened today with most of the buyers and sellers still watching developments west of the Mississippi River for possible definite indications as to the probable trend in refinery prices over the next 30 days. So far as spot markets are concerned the past week was a duplication of the previous week in which no important price changes were reported with spot trading in most products dull.

A substantial part of the trade is still expecting further adverse developments in the efforts to improve the Mid-Continent crude and gasoline markets. This is particularly true of buyers who have reduced their spot purchases to a minimum with the apparent expectation that they will be able to secure price concessions in the near future. This attitude is based on the assumption that if conditions do not improve in the near future, lower crude price schedules are certain and this in turn will mean a general lowering of refinery quotations not only in the case of gasoline but practically all the other refinery products.

In this connection it is evident that some of the heavier products are in need of support as well as gasoline. The motor fuel markets have been maintained with considerable difficulty for several months. At the same time over the latter part of last year and the fore part of this year the kerosene, distillate, gas oil and fuel oil markets were generally strong, a condition which was not brought about by any artificial efforts to control supply but due entirely to an improved demand with little or no increase in supply from refineries. Even when gasoline started to weaken the latter part of 1933, these products continued strong due to this situation. In recent weeks, however, the supplies of these products have increased and with a seasonal decrease in demand there have been indications that this market was not as strong as it was earlier in the year. Market students are predicting a reactionary trend in these products as well as gasoline, should crude oil prices decline.

### Lubricating Oils

These observers also are pointing out the necessity of lubricating oil and wax manufacturers reducing their output if present prices are to be maintained. The price movement in these products is largely independent of crude price trends for the reason that the cost of manufacture rather than the cost of the raw crude is the controlling factor in markets. Recent high prices have stimulated production and at the same time have restricted demand in some quarters. This situation it is claimed will be more apparent in a few weeks when the summer peak demand for motor oil has passed.

**EASTERN GASOLINE DEMAND—FIRST FOUR MONTHS, 1934 AND 1933**
(Data in gallons)

| States— | First 4 months 1934 | First 4 months 1933 | 1934 gain | % |
|---|---|---|---|---|
| Connecticut | 66,405,000 | 63,823,000 | 2,582,000 | 4.0 |
| Delaware | 10,955,000 | 10,312,000 | 643,000 | 6.2 |
| District of Columbia | 31,152,000 | 32,823,000 | *1,671,000 | *5.0 |
| Maine | 23,036,000 | 21,502,000 | 1,534,000 | 7.1 |
| Maryland | 57,028,000 | 53,488,000 | 3,540,000 | 6.6 |
| Massachusetts | 154,521,000 | 145,955,000 | 8,566,000 | 5.8 |
| New Hampshire | 16,080,000 | 14,146,000 | 1,934,000 | 13.6 |
| New Jersey | 191,424,000 | 199,385,000 | *7,961,000 | *4.0 |
| New York | 424,715,000 | 419,694,000 | 5,021,000 | 1.2 |
| Pennsylvania | 317,758,000 | 289,408,000 | 28,350,000 | 9.8 |
| Rhode Island | 29,361,000 | 28,018,000 | 1,343,000 | 4.7 |
| Vermont | 9,881,000 | 8,629,000 | 1,252,000 | 14.5 |
| Total | 1,332,316,000 | 1,287,183,000 | 45,133,000 | 3.5 |

*Loss.

The only apparent remedy is to curtail the output in line with the current demand. It has been suggested that this be done under government supervision with approximately 50 companies which manufacture lubricating oils participating with a smaller number in the case of wax. Such a curtailment program it is pointed out could be made effective regardless of whether or not the present efforts to maintain an equilibrium in crude oil and gasoline supply and demand are successful. It is felt that the chances of success in such a program are far greater than in the case of gasoline due to the fewer companies involved, the smaller output and the less complicated marketing situation.

### Eastern Gasoline Consumption

The accompanying table shows the gasoline consumption of the states served from this territory for the first four months of this year in comparison with the same period in 1933. These figures are based on gasoline tax collection reports of the individual states. Gasoline tax collection figures are limited as to accuracy by tax evasion and lack of uniformity in collection methods. They are, however, the most accurate data available on which comparisons by states can be based.

Probably the most important situation reflected in these figures is that the increase in demand for gasoline the first four months of this year in these 11 eastern states and the District of Columbia was substantially less than the indicated increase for the country as a whole.

The state gasoline tax reports as compiled by the American Petroleum Institute indicate a gain of 10.2 per cent in gasoline consumption the first four months of this year compared with the same period in 1933. This compares with the Bureau of Mines reports based on refinery shipments which show a gain of 8.8 per cent in the movement to domestic buyers. It will be noted in the table that the gain for the same period for the eastern states was only 3.5 per cent or approximately 7 per cent less than the country as a whole. Individual companies have reported much larger gains than this although others marketing on a national scale have said that their increases in other parts of the country were greater than in the eastern part of the United States.

New Jersey, which is one of the principal gasoline consuming states, shows a loss of 4 per cent in its 1934 gallonage up to May 1 and in the District of Columbia the gallonage was less than the first four months of 1933 by 5 per cent. These decreases tend to lower the average for the entire area.

Of the 45,133,000-gallon gain shown for the entire area, 28,350,000 gallons or 60 per cent is accounted for by Pennsylvania. The gain in this State is approximately the average of the country reflecting, it is said, the improved industrial conditions particularly in steel and allied industries. The data in the table also show a substantial percentage gain in all of the New England States with Vermont leading with a 14.5 per cent gain followed by New Hampshire with a 13.6 per cent gain.

Market students who have called attention to these figures have contended that refiners in this territory may have been misled by the data for the entire country and have based their plant operations on the assumption that a 8 to 10 per cent gain in their gasoline requirements was to be expected if they maintained their percentage of the total motor fuel gallonage. They particularly emphasize the fact that the gain in New York State, the largest consuming state in the United States, which accounts for 25 per cent of the eastern consumption, has an increase of only 1.2 per cent.

As an additional angle of this situation in regard to gasoline demand this year and last, it is said that the various types of retail price-cutting often develop because those in charge of the gasoline sales of the distributing companies do not realize that conditions are not uniform not only as to states but also by districts and cities within these states. It is said that business recovery in certain cities, districts and states in this section have been far more pronounced than in others and this fact is reflected in the consumer gasoline demand. Certain sections have shown no improvement as to employment, while others have had relatively little unemployment over the past eight months. Sales managers overlook these basic conditions and when gasoline sales in certain sections fail to show the average gains of their company they conclude that their competitors are getting the business through price cutting. In their efforts to stimulate sales they resort to similar activities with the result that a general collapse in retail prices results. The suggested remedy is the pooling of information by the major distributors through a neutral agency which would determine actual conditions

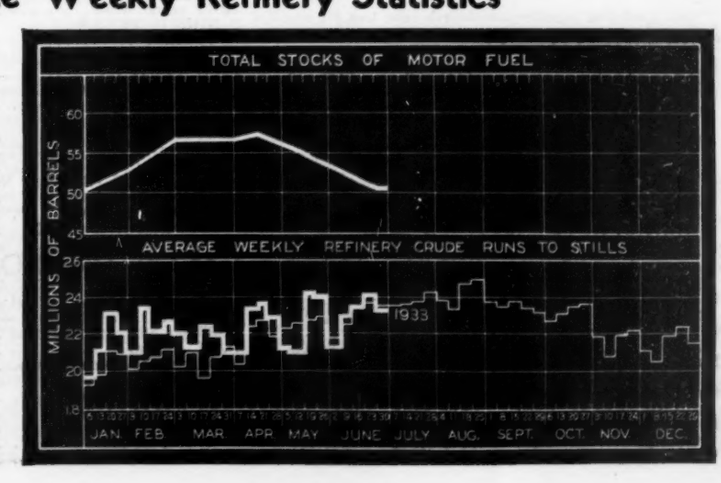
(Continued on Page 32)

# American Petroleum Institute Weekly Refinery Statistics

**Week Ending June 30, 1934**

| | Capacity reporting per cent | Daily crude runs (bbls.) | Finished motor fuel (bbls.) | Gas oil and fuel oil (bbls.) |
|---|---|---|---|---|
| East Coast | 100.0 | 442,000 | 16,422,000 | 9,044,000 |
| Appalachian | 93.3 | 97,000 | 1,655,000 | 859,000 |
| Indiana, Illinois, Kentucky | 94.6 | 342,000 | 8,552,000 | 3,236,000 |
| Oklahoma, Kansas, Missouri | 83.7 | 246,000 | 5,223,000 | 3,425,000 |
| Inland Texas | 47.6 | 92,000 | 1,072,000 | 1,564,000 |
| Texas Gulf | 97.5 | 448,000 | 4,024,000 | 6,952,000 |
| Louisiana Gulf | 96.4 | 133,000 | 1,200,000 | 1,474,000 |
| North Louisiana and Arkansas | 83.7 | 45,000 | 288,000 | 448,000 |
| Rocky Mountain | 66.7 | 44,000 | 1,094,000 | 648,000 |
| California | 96.9 | 446,000 | 11,875,000 | 78,573,000 |
| Total United States | 89.7 | 2,335,000 | 51,405,000 | 106,223,000 |

Note: Finished motor stocks shown in graph and in table include those at refineries, at bulk terminals and in pipe lines, but do not include 5,000,000 to 7,000,000 bbls. of unfinished gasoline which could be reprocessed quickly.



# REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

Quotations are exclusive of the Federal tax of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

## Refinery Gasolines

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .03½ | .03¾ | .03½ | .03¾ |
| 60-64.9 octane | .04½ | .04¾ | .04½ | .04¾ |
| 65-70 octane | .04¾ | .05 | .04¾ | .05 |
| 60-62 400 grades: | | | | |
| Below 60 octane | .03½ | .03¾ | .03½ | .03¾ |
| 60-64.9 octane | .04⅝ | .04⅞ | .04⅝ | .04⅞ |
| 65-70 octane | .04⅞ | .05⅛ | .04⅞ | .05⅛ |
| 64-66 375 | .04 | .04¼ | .04 | .04¼ |
| 68-70 360 | .04⅛ | .04⅜ | .04⅛ | .04⅜ |
| **NORTH TEXAS—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .03¼ | .03½ | .03¼ | .03½ |
| 60-64.9 octane | .04¼ | .04½ | .04¼ | .04½ |
| 65-70 octane | .04⅝ | .04⅞ | .04⅝ | .04⅞ |
| 60-62 400 | .03⅝ | .03⅞ | .03⅝ | .03⅞ |
| 64-66 375 | .04 | .04⅛ | .04 | .04⅛ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04 | .04¼ | .04 | .04¼ |
| 60-64.9 octane | .05⅛ | .05⅜ | .05⅛ | .05⅜ |
| 65-70 octane | .05¼ | .05½ | .05¼ | .05½ |
| 60-62 400 | .04⅛ | .04⅜ | .04⅛ | .04⅜ |
| 68-70 360 | .04¼ | .04⅜ | .04¼ | .04⅜ |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .04 | .04¼ | .04 | .04¼ |
| 60-64.9 octane | .05⅛ | .05⅜ | .05⅛ | .05⅜ |
| 65-70 octane | .05¼ | .05½ | .05¼ | .05½ |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| U. S. Motor grades: | | | | |
| Below 60 octane | .03½ | .03⅝ | .03⅜ | .03⅝ |
| 60-64.9 octane | .04⅜ | .04½ | .04¼ | .04½ |
| 65-70 octane | .04⅝ | .04¾ | .04½ | .05 |
| 60-62 400 | .03⅝ | .03¾ | .03½ | .03⅝ |
| 64-66 375 | .04 | .04⅛ | .04⅛ | .04¼ |
| 68-70 360 | .04¼ | .04⅜ | .04¼ | .04½ |
| Aviation fighting grade | .04⅞ | .05⅛ | .05 | .05⅛ |
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 58-60 U. S. Motor: | | | | |
| Below 60 octane | .05⅝ | .05¾ | .05⅝ | .05¾ |
| 60-64.9 octane | .06½ | .06⅝ | .06½ | .06⅝ |
| 65-70 octane | .07 | .07⅛ | .07 | .07⅛ |
| 68-70 350 | .06½ | | .06½ | |
| **CALIFORNIA (domestic movement)—** | | | | |
| 54-58 U. S. Motor | .06 | .07½ | .05 | .06 |
| 58-60 400 | .07 | .09 | .06 | .07 |
| **EAST COAST—** | | | | |
| U. S. Motor, below 60 octane: | | | | |
| *New York | .06 | .06¼ | .06 | .06¼ |
| Baltimore | .06 | .06¼ | .06 | .06¼ |
| U. S. Motor, 60-64 octane: | | | | |
| *New York (Bayonne) | .06¼ | .06½ | .06¼ | .06½ |
| Philadelphia | .06½ | .06¾ | .06½ | .06¾ |
| Boston | .0645 | .0670 | .0645 | .0670 |
| Baltimore | .06¼ | .06½ | .06¼ | .06½ |
| Charleston, S. C. | .06¼ | .06½ | .06¼ | .06½ |
| U. S. Motor, 65 and above: | | | | |
| *New York (Bayonne) | .06½ | .06¾ | .06½ | .06¾ |
| Philadelphia | .06¾ | | .06¾ | |
| Boston | .0670 | .07 | .0670 | .07 |
| Baltimore | .06½ | .06¾ | .06½ | .06¾ |
| Charleston, S. C. | .06½ | .06¾ | .06½ | .06¾ |

*All grades of gasoline one-fourth cent less for small barge shipments.

| | | | | |
|---|---|---|---|---|
| **GULF COAST (domestic)—** | | | | |
| U. S. Motor: | | | | |
| Below 60 octane | .04¾ | .05 | .04¾ | .05 |
| 60-64.9 octane | .05 | .05¼ | .05 | .05¼ |
| 65 octane and higher | .05¼ | .05½ | .05¼ | .05½ |

## Naphthas

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 50-54 430-450 (blending) | .05⅝ | | .05⅝ | |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 50-52 450 (blending) | .03¾ | .04 | .03¾ | .04 |
| Cleaners' naphtha, 56-58 gr., 200 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Lacquer diluent, 180 i.b.p.-250 e.p. | .07¾ | .08 | .07¾ | .08 |
| Lacquer diluent, 140 i.b.p.-200 e.p. | .08¾ | .09 | .08¾ | .09 |
| Rubber solvent, 68-70 gr., 100 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash | .06¼ | .06½ | .06¼ | .06½ |
| Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash | .06¼ | .06½ | .06¼ | .06½ |
| V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p. | .06¾ | .07 | .06¾ | .07 |
| Petroleum spirits | .05¾ | .06 | .05¾ | .06 |

## Natural Gasolines

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| Grade 26-70 | .01¼ | .01½ | .01¼ | .01½ |
| Grade 18-55 | .01¼ | .01⅜ | .01¼ | .01⅜ |
| Low vapor pressure grades: | | | | |
| 15 lb. v.p. (max.) | .02¼ | .02½ | .02¼ | .02½ |
| 11 lb. v.p. (max.) | .02¾ | .02⅞ | .02¾ | .02⅞ |
| **NORTH TEXAS—** | | | | |
| Grade 26-70 | .01⅛ | .01¼ | .01⅛ | .01¼ |
| Grade 18-55 | .01⅝ | .01¾ | .01⅝ | .01¾ |
| Low vapor pressure grades: | | | | |
| 15 lb. v.p. (max.) | .02⅛ | .02¼ | .02⅛ | .02¼ |
| 11 lb. v.p. (max.) | .02⅝ | .02¾ | .02⅝ | .02¾ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| Grade 26-70 | .01⅝ | .01⅞ | .01⅝ | .01⅞ |
| **CALIFORNIA—** | | | | |
| 75-78 375 | .05½ | .06½ | .05¼ | .06 |

## Kerosenes

(All kerosenes water white)

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 41-43 | .03⅜ | 03⅜ | .03⅜ | .03⅜ |
| 42-44 | .03⅜ | .03⅝ | .03⅜ | .03⅝ |
| **NORTH TEXAS—** | | | | |
| 40-41 | .02⅞ | .03¼ | .02⅞ | .03¼ |
| 41-43 | .03 | .03¼ | .03 | .03¼ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 41-43 | .03¼ | | .03¼ | |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 41-43 | .03⅜ | .03½ | .03⅜ | .03½ |
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 45 | .04½ | .04⅝ | .04½ | .04⅝ |
| 46 | .04⅝ | .04⅞ | .04⅝ | .04⅞ |
| 47 | .04⅞ | .05 | .04⅞ | .05 |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 41-43 | .03⅛ | .03¼ | .03⅛ | .03¼ |
| 42-44 | .03¼ | .03½ | .03¼ | .03½ |
| **CALIFORNIA (Pacific Coast consumption)—** | | | | |
| 38-40 high burning test | .04¾ | .05¼ | .04¾ | .05¼ |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 41-43 | .05¼ | .05½ | .05¼ | .05½ |
| **GULF COAST (domestic)—** | | | | |
| 41-43 | .04⅜ | .04½ | .04⅜ | .04½ |

## Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

| | July 3 | | June 26 | |
|---|---|---|---|---|
| Breeze (screenings) | 5.00 | | 5.00 | |
| Pile run | 5.00 | | 5.00 | |
| Direct from still | 6.00 | | 6.00 | |
| Lump and egg | 7.00 | 8.00 | 7.00 | 8.00 |

## Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 32-36 straw | .02¾ | .02½ | .02⅝ | .02½ |
| 36-38 straw | .02½ | .02⅝ | .02½ | .02⅝ |
| 38-40 straw | .02½ | .02⅝ | .02½ | .02⅝ |
| 39-41 prime white | .02½ | .02¾ | .02½ | .02¾ |
| **NORTH TEXAS—** | | | | |
| 38-40 straw | .02½ | .02¾ | .02½ | .02¾ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 36-40 furnace oil | .02⅞ | .03 | .02⅞ | .03 |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 32-36 furnace oil | .02⅝ | .02¾ | .02⅝ | .02¾ |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 32-36 straw | .02⅜ | .02½ | .02½ | .02¾ |
| 38-40 straw | .02⅜ | .02⅝ | .02½ | .02¾ |
| 38-40 prime white | .02½ | .02¾ | .02⅝ | .02⅞ |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 36-40 (No. 1 grade) | .05¼ | .05½ | .05¼ | .05½ |
| 32-36 (No. 2 grade) | .04¾ | .05 | .04¾ | .05 |
| 21 industrial (No. 4 grade) | .04½ | .05 | .04½ | .05 |

## Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gallon; Diesel and fuel oils per barrel)

| | July 3 | | June 26 | |
|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | |
| 32-36 gas oil cracking stocks | .02⅛ | .02¼ | .02⅛ | .02¼ |
| U.G.I. gas oil | .02⅛ | .02⅜ | .02¼ | .02⅜ |
| 32-36, zero to 15 gas oil | .02⅜ | .02½ | .02⅜ | .02½ |
| 28-30 No. 3 burner oil | .95 | 1.00 | .95 | 1.00 |
| 28-30, zero to 10 fuel oil | .90 | .95 | .90 | .95 |
| 26-30, zero to 10 fuel oil | .85 | .95 | .85 | .95 |
| 24-26 fuel oil | .75 | .80 | .75 | .80 |
| 20-22 fuel oil | .67½ | .70 | .67½ | .70 |
| Below 16 fuel oil | .62½ | .65 | .62½ | .65 |
| **NORTH TEXAS—** | | | | |
| 32-36 gas oil, industrial | .01⅞ | .02 | .01⅞ | .02 |
| 22-26 fuel oil | .67½ | .70 | .67½ | .70 |
| Below 20 fuel oil | .57½ | .62½ | .57½ | .62½ |
| **NORTH LOUISIANA (Ark., N. La. & Miss. del.)—** | | | | |
| 32-36 gas oil, zero | .02½ | .02⅝ | .02½ | .02⅝ |
| 14-16 fuel oil | .70 | .75 | .70 | .75 |
| **ARKANSAS (Ark., N. La. & Miss. del.)—** | | | | |
| 30-32 gas oil, zero | .02½ | .02⅝ | .02½ | .02⅝ |
| 32-36 gas oil | .02⅝ | .02½ | .02⅝ | .02½ |
| 14-16 fuel oil | .70 | .75 | .70 | .75 |
| **CHICAGO (based on Oklahoma Group 3)—** | | | | |
| 32-36 gas oil, industrial | .02⅛ | .02⅝ | .02⅛ | .02⅛ |
| 28-30 zero to 10, fuel oil | .97½ | 1.02½ | .97½ | 1.02½ |
| 26-28 zero to 10, fuel oil | .87½ | .92½ | .87½ | .92½ |
| 22-26 zero to 10, fuel oil | .77½ | .82½ | .77½ | .82½ |
| 18-22 zero to 10, fuel oil | .62½ | .67½ | .62½ | .67½ |
| Below 18 fuel oil | .57½ | .62½ | .57½ | .60 |

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

| | | | | |
|---|---|---|---|---|
| **PENNSYLVANIA (inland refineries)—** | | | | |
| 36-40 | .04⅛ | .04¼ | .04⅛ | .04¼ |
| **CALIFORNIA—** | | | | |
| 30-34 gas oil per bbl. | 1.05 | 1.15 | 1.05 | 1.15 |
| 27 plus Diesel | 1.05 | 1.15 | 1.05 | 1.15 |
| 27 plus Diesel (bunkers) | 1.13 | | 1.25 | |
| 12-16 (bunker at tidewater) | .80 | .85 | .70 | .85 |
| 10-16 (cargo lots) | .65 | .75 | .65 | .70 |
| 12-17 (tank cars) | .60 | .75 | .55 | .75 |
| 10-17 (inland refineries) | .55 | .65 | | |
| **GULF COAST—** | | | | |
| 28-30 gas oil | .03½ | .03¾ | .03½ | .03¾ |
| 28-30 Diesel (bunkers) | 1.80 | | 1.80 | |
| Bunker C (bulk cargoes) | .95 | 1.00 | .95 | 1.00 |
| Bunker C (bunkers) | 1.05 | 1.10 | 1.05 | 1.10 |
| **NEW YORK (Bayonne, N. J.)—** | | | | |
| 28 plus, gas oil | .04½ | .05 | .04½ | .05 |
| 28-30 Diesel (lighterage 6½ cents per bbl.) | 1.95 | | 1.95 | |
| 28-30 Diesel (tank cars) | .04¾ | .05 | .04¾ | .05 |
| *Bunker C (to ocean-going ships in N. Y. harbor) | 1.30 | | 1.30 | |

*Lighterage charge 5 cents per barrel additional.

## Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

| OKLAHOMA (Group 3)— | July 3 | June 26 |
|---|---|---|
| Zero to 10 Cold Test: | | |
| 150-3 | .10 | .10 |
| 180-3 | .11¼ | .11¼ |
| 180-4 | .10¾ | .10¾ |
| 200-3 | .11¾ | .11¾ |
| 200-4 | .11¼ | .11¼ |
| 240-3 | .13¾ | .13¾ |
| 240-4 | .13¼ | .13¼ |
| 280-3 | .14¾ | .14¾ |
| 280-4 | .14 | .14 |
| 300-3½ | .15¼ | .15¼ |
| 400-4 | .17¼ | .17¼ |
| 100-2 paraffin oil | .05¾ | .05¾ |
| 15-30 Cold Test: | | |
| 200-3 | .10¾ | .10¾ |
| 200-4 | .10¼ | .10¼ |
| 240-3 | .12¾ | .12¾ |
| 240-4 | .12¼ | .12¼ |
| 280-3 | .13¾ | .13¾ |
| 280-4 | .13 | .13 |
| **GULF COAST—** | | |
| Pale Oils: | | |
| 200-3 | .07½ | .07½ |
| 300-3 | .08 .08¼ | .08 .08¼ |
| 500-3½ | .09 .09¼ | .09 .09¼ |
| 750-3½ | .09½ .09¾ | .09½ .09¾ |
| 1,200-3½ | .10 .10¼ | .10 .10¼ |
| 2,000-4 | .10¼ .10½ | .10¼ .10½ |
| Red Oils: | | |
| 200-5-6 | .06½ | .06½ |
| 300-5-6 | .07 .07¼ | .07 .07¼ |
| 500-5-6 | .08 .08¼ | .08 .08¼ |
| 750 | .08½ .08¾ | .08½ .08¾ |
| 1,200-5-6 | .09 .09¼ | .09 .09¼ |
| **CALIFORNIA—** | | |
| Pale Oils: | | |
| 100-2½-3 | .23 .25 | .23 .25 |
| 200-2½-3 | .23 .25 | .23 .25 |
| 300-3-3½ | .23 .25 | .23 .25 |
| 350-3-4 | .23 .25 | .23 .25 |
| 400-3-4 | .23 .25 | .23 .25 |
| 450-3-4 | .23 .25 | .23 .25 |
| 550-3-4 | .23 .25 | .23 .25 |
| 600-3-4 | .23 .25 | .23 .25 |
| Red Oils: | | |
| 200-4-5 | .23 .25 | .23 .25 |
| 300-5-6 | .23 .25 | .23 .25 |
| 350-5-6 | .23 .25 | .23 .25 |
| 400-5-6 | .23 .25 | .23 .25 |

| | | | | |
|---|---|---|---|---|
| 450-5-6 | .23 | .25 | .23 | .25 |
| 500-5-6 | .23 | .25 | .23 | .25 |
| 600-5-6½ | .23 | .25 | .23 | .25 |
| 700-6½ plus | .23 | .25 | .23 | .25 |
| 750-6½ plus | .23 | .25 | .23 | .25 |
| 900-6½ plus | .23 | .25 | .23 | .25 |
| PENNSYLVANIA— | | | | |
| 150 vis. at 70° F., 3 color; 400-405 flash: | | | | |
| Zero pour test | .25½ | .26 | .25½ | .26 |
| 10 pour test | .24½ | .25 | .24½ | .25 |
| 15 pour test | .24 | .24½ | .24 | .24½ |
| 25 pour test | .23 | .23½ | .23 | .23½ |
| 180 vis. at 70° F., 3 color: | | | | |
| 25 pour test | .26½ | .27 | .26½ | .27 |
| 200 vis. at 70° F., 3 color: | | | | |
| Zero pour test | .32 | .33½ | .32 | .33½ |
| 10 pour test | .30½ | .32 | .30½ | .32 |
| 15 pour test | .30 | .30½ | .30 | .30½ |
| 25 pour test | .27 | .28 | .27 | .28 |

## Bright and Steam Refined Stocks

| OKLAHOMA (Group 3)— | July 3 | June 26 |
|---|---|---|
| Bright Stocks: | | |
| 190-200 D | .25¾ | .26¼ |
| 150-160 D, 0-10 | .23 | .23½ |
| 150-160 D, 10-25 | .22½ | .23 |
| 150-160 25-40 | .22 | .22½ |
| 150-160 E | .22 | .22½ |
| Steam refined: | | |
| 630 light green (treated) | .14½ | .14½ |
| 600 light green (untreated) | .07 .09 | .07 .09 |
| 600 dark green (untreated) | .05 .08 | .05 .08 |
| PENNSYLVANIA— | | |
| Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 210; 540-550 flash): | | |
| 10 pour test | .28 .28½ | .28 .28½ |
| 15 pour test | .27½ .28 | .27½ .28 |
| 20 pour test | .27 .27½ | .27 .27½ |
| 25 pour test | .26½ .27 | .26½ .27 |
| Steam refined: | | |
| 600 | .16 .16½ | .17 .17½ |
| 650 | .19 .20½ | .19½ .21 |
| 600 Pennsylvania flash | .20 .20½ | .20½ .21 |
| 630 Pennsylvania flash | .24½ .25 | .25 .25½ |
| 600 Warren E filtered | .20 .20½ | .20½ .21 |

## Wax and Petrolatum

(Prices per pound)

| OKLAHOMA (Group 3)— | July 3 | June 26 |
|---|---|---|
| 124-126 white crude scale | .03¼ .03⅜ | .03¼ .03⅜ |
| PENNSYLVANIA— | | |
| 122-124 | .0360 | .0360 |
| 124-126 | .0365 | .0365 |
| NEW YORK HARBOR— | | |
| Wax (a.m.p.) in bags fully refined: | | |
| 120-122 | .0420 .0430 | .0420 .0430 |
| 123-125 | .0440 .0460 | .0440 .0460 |
| 125-127 | .0445 .0470 | .0445 .0470 |
| 128-130 | .0480 .0495 | .0480 .0495 |
| 130-132 | .05 .0510 | .05 .0510 |
| 133-135 | .0545 .0570 | .0545 .0570 |
| 135-137 | .0570 .0595 | .0570 .0595 |
| 124-126 crude scale | .03½ .03¾ | .03½ .03¾ |
| Petrolatum in barrels in carload lots: | | |
| Dark green | .01⅞ | .01⅞ |
| Amber | .02⅞ .03 | .02⅞ .03 |
| Extra amber | .03¼ .03½ | .03⅛ .03¼ |
| Lily white | .06¾ .06⅞ | .06¾ .06⅞ |
| Snow white | .07¾ .07⅞ | .07¾ .07⅞ |
| Cream | .05⅝ .05¾ | .05⅝ .05¾ |
| CHICAGO (f.o.b. switching district)*— | | |
| 122-124 wax | .0490 .0500 | .0490 .0500 |
| 125-127 wax | .0515 .0525 | .0515 .0525 |
| 127-129 wax | .0530 .0540 | .0530 .0540 |
| 130-132 wax | .0590 .0600 | .0590 .0600 |
| 132-134 wax | .0615 .0625 | .0615 .0625 |

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F. a.m.p.

## Export Prices

GASOLINE

| GULF COAST— | July 3 | June 26 |
|---|---|---|
| U. S. Motor | .04¼ .04⅜ | .04¼ .04⅜ |

| | | | | |
|---|---|---|---|---|
| 60-62 400 | .04⅜ | | .04⅜ | |
| 61-63 390 | .04½ .04⅝ | | .04½ .04⅝ | |
| 64-66 375 | .04⅝ .04¾ | | .04⅝ .04¾ | |
| LOS ANGELES, CALIF.— | | | | |
| U. S. Motor grades: | | | | |
| 53-55 octane | .04 .04¼ | | .04 .04¼ | |
| 55-65 octane | .04¼ .04½ | | .04¼ .04½ | |
| 65-67 octane | .04½ .04¾ | | .04½ .04¾ | |
| 67-69 octane | .04¾ .05 | | .04¾ .05 | |
| Above 69 octane | .05 .05¼ | | .05 .05¼ | |
| 58-60 400 endpoint | .04¾ .05½ | | .04¾ .05½ | |
| **KEROSENE** | | | | |
| GULF COAST— | | | | |
| 41-43 prime white | .04 .04¼ | | .04 .04¼ | |
| 41-43 water white | .04⅛ .04¼ | | .04⅛ .04¼ | |
| 44 water white | .04¼ .04⅜ | | .04¼ .04⅜ | |
| LOS ANGELES, CALIF.— | | | | |
| 41-43 water white | .04¼ .04¾ | | .04¼ .04¾ | |
| **LUBRICANTS** | | | | |
| NEW YORK (f.a.s. in bbls.)— | | | | |
| Cylinder Stocks: | | | | |
| 600 Warren E | .27 | .28 | .27 | .28 |
| 600 S.R. unfiltered | .25 | .25½ | .25 | .25½ |
| 650 S.R. unfiltered | .27 | .27½ | .27 | .27½ |
| 600 flash S.R. | .28 | .28½ | .28 | .28½ |
| 630 flash S.R. | .32 | .33 | .32 | .33 |
| Bright Stocks: | | | | |
| 8 color | .34 | .35 | .34 | .35 |
| 6½ plus color, in dilution | .32½ | .33 | .32½ | .33 |
| **NEUTRAL OILS** | | | | |
| 200-3 color | .35 | .36 | .35 | .36 |
| 150-3 color | .29 | .31 | .29 | .31 |
| **PARAFFIN WAX (Fully Refined)** | | | | |
| NEW YORK (prices per pound)— | | | | |
| 120-122 a.m.p. | .0405 .04¼ | | .0405 .04¼ | |
| 123-125 a.m.p. | .0430 .0455 | | .0430 .0455 | |
| 125-127 a.m.p. | .0440 .0465 | | .0440 .0465 | |
| 128-130 a.m.p. | .04¾ .0490 | | .04¾ .0490 | |
| 130-132 a.m.p. | .0495 .0505 | | .0495 .0505 | |
| 133-135 a.m.p. | .0540 .0565 | | .0540 .0565 | |
| 135-137 a.m.p. | .0565 .0590 | | .0565 .0590 | |

# Crude Oil Gravity Table

| Degrees gravity— | 1 Oklahoma and Kansas | 2 North Texas, Central Texas and East Central Texas | 3 North Louisiana and Arkansas | 4 Gray County, Texas | 4 Carson, Hutchinson, and Moore Counties, Texas | 6 Conroe, Texas | 7 Salt Creek, Wyo. | 8 Gulf Coast, Texas, and Louisiana | 9 Gulf Coast, Texas, and Louisiana | 10 Bolton Valley, Louisiana |
|---|---|---|---|---|---|---|---|---|---|---|
| Below 20 | .... | .... | .... | .... | .... | .... | .... | $.82 | $.82 | .... |
| 20-20.9 | .... | .... | .... | .... | .... | .... | .... | .84 | .84 | .... |
| 21-21.9 | .... | .... | .... | .... | .... | .... | .... | .86 | .86 | .... |
| 22-22.9 | .... | .... | .... | .... | .... | .... | .... | .88 | .88 | .... |
| 23-23.9 | .... | .... | .... | .... | .... | .... | .... | .90 | .90 | .... |
| 24-24.9 | .... | .... | .... | .... | .... | .... | .... | .92 | .92 | .... |
| Below 25 | *$.76 | .... | .... | .... | .... | .... | .... | .... | .... | $.70 |
| 25-25.9 | *.78 | .... | .... | .... | .... | .... | .... | .94 | .94 | .72 |
| 26-26.9 | *.80 | .... | .... | .... | .... | .... | .... | .96 | .96 | .74 |
| 27-27.9 | *.82 | .... | .... | .... | .... | .... | .... | .98 | .98 | .76 |
| 28-28.9 | *.84 | .... | .... | .... | .... | .... | .... | 1.00 | 1.00 | .78 |
| Below 29 | .84 | $.79 | $.79 | .... | .... | .... | $.84 | .... | .... | .... |
| 29-29.9 | .86 | .81 | .81 | .... | .... | .... | .86 | 1.02 | 1.02 | .80 |
| 30-30.9 | .88 | .83 | .83 | .... | .... | .... | .88 | 1.04 | 1.04 | .82 |
| 31-31.9 | .90 | .85 | .85 | .... | .... | .... | .90 | 1.06 | 1.05 | .84 |
| 32-32.9 | .92 | .87 | .87 | .... | .... | .... | .92 | 1.08 | 1.06 | .86 |
| 33-33.9 | .94 | .89 | .89 | .... | .... | .... | .94 | 1.10 | 1.07 | .88 |
| 34-34.9 | .96 | .91 | .91 | .... | .... | .... | .96 | 1.12 | 1.08 | .90 |
| Below 35 | .... | .... | .... | $.79 | $.69 | .... | .... | .... | .... | .... |
| 35-35.9 | .98 | .93 | .93 | .81 | .71 | $1.09 | .98 | 1.12 | 1.09 | .92 |
| 36-36.9 | 1.00 | .95 | .95 | .83 | .73 | 1.11 | 1.00 | 1.12 | 1.10 | .94 |
| 37-37.9 | 1.02 | .97 | .97 | .85 | .75 | 1.13 | 1.02 | 1.12 | 1.11 | .96 |
| 38-38.9 | 1.04 | .99 | .99 | .87 | .77 | 1.15 | 1.04 | 1.12 | 1.12 | .98 |
| 39-39.9 | 1.06 | 1.01 | 1.01 | .89 | .79 | 1.17 | 1.06 | 1.12 | 1.13 | 1.00 |
| 40 and over | 1.08 | 1.03 | 1.03 | .91 | .81 | 1.19 | 1.08 | 1.12 | 1.14 | 1.02 |

Note.—Effective June 1, 1934, Texas Co. purchases Texas Panhandle crude on a sweet crude and sour crude basis. Panhandle sweet crude is paid for on a basis of the Gray County prices posted above, and Panhandle sour crude is paid for on a basis of Carson and Hutchinson County prices posted above.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Phillex Oil Co., which begins with below 31° at 88 cents.

Column 1.—Effective September 29, Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phillex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; Oct. 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2.—Effective September 29, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3.—Effective September 29, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 35°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day Phillex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5.—Effective September 29, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phillex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Colum 6.—Effective September 29, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30, by Texas Co. which on September 29 had posted a schedule of $1.07 to $1.13 with a 1-cent spread on each degree.

Column 7.—Effective September 29, by Stanolind Oil & Gas Co.

Column 8.—Effective September 29, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 30-30.9°, 84 cents with 2 cents added for each degree upward to 34 and over at $1.13, and in Cameron Meadows and Iowa, Louisiana: Below 26°, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 26° 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 26°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9.—Effective September 30, Texas Co. (On September 29, Texas Co. had posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10.—Effective September 29, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 49)

## Crude Oil Prices

### Oklahoma, Kansas, North Central and East Central Texas

| | |
|---|---|
| East Texas | $1.00 |
| Stratman, Kans. (Sept. 29, 1933) | 1.03 |
| Corsicana (heavy) (June 17, 1933)* | .80 |
| Other fields | (See gravity table) |

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.

*Magnolia Petroleum Co.

### West Texas

| | |
|---|---|
| Crane, Upton, Crockett, Howard Glasscock, Mitchell (Sept. 29, 1933) | $.70 |
| Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) | .75 |
| Pecos County, Yates shallow pool (Sept. 29, 1933)* | .65 |
| Jones and Fisher Counties | See gravity table |

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

### Gulf Coast

| | |
|---|---|
| Grade A and Grade B specifications discontinued by leading buyers | (See gravity table) |
| Tomball (see note)* | $1.15 |
| Livingston (Sept. 29, 1933)† | 1.00 |
| Cleveland (Jan. 11, 1934) | 1.00 |
| Greta (Sept. 29, 1933) | .85 |
| Refugio, light | (See gravity table) |
| Refugio, heavy (Sept. 29, 1933)‡ | .85 |
| Markham and High Island | (See Gulf Coast gravity table) |
| Conroe | (See Conroe gravity table) |

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2, by Magnolia Petroleum Co., and November 10, by Stanolind Oil & Gas Co.

*Gretz posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

### South Central and Southwest Texas

(See note below table)

| | |
|---|---|
| Darst Creek | $.87 |
| Mirando | .80 |
| Luling (Sept. 29, 1933) | .75 |
| Pettus | 1.05 |
| Salt Flat | .87 |
| Lytton Springs (Sept. 29, 1933) | .95 |
| Duval County (Sept. 29, 1933) | .80 |
| Saxet | .85 |

Note—Effective on September 29 by Humble Oil & Refining Co., in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 49)

# TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

July 3, 1934

### Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

### Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon, or 3 cents a gallon off retail prices, is permitted for purchases running between 3,000 and 10,000 gallons a month, and 2 cents a gallon off tank wagon, or 4 cents a gallon off retail prices, for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

### Rocky Mountain District

CONTINENTAL OIL CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Denver, Colo. | 18.0 | 20.0 | 6.0 | 10.0 |
| Pueblo | 18.0 | 20.0 | 6.0 | 18.0 |
| Grand Junction | 20.5 | 22.5 | 6.0 | 16.0 |
| Casper, Wyo. | 18.0 | 20.0 | 5.0 | 11.5 |
| Cheyenne | 18.0 | 20.0 | 5.0 | 13.0 |
| Butte, Mont. | 21.0 | 23.0 | 5.0 | 17.5 |
| Billings | 21.0 | 23.0 | 6.0 | 16.5 |
| Helena | 22.5 | 24.5 | 6.0 | 17.5 |
| Great Falls | 20.0 | 22.0 | 6.0 | 17.5 |
| Salt Lake, Utah | 21.0 | 23.0 | 5.0 | 16.0 |
| Boise, Idaho | 22.0 | 24.0 | 6.0 | 18.0 |
| Twin Falls | 22.0 | 24.0 | 6.0 | 18.0 |
| Albu'que, N. M. | 19.5 | 21.5 | *7.0 | 13.0 |

*One-cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

### Standard Oil Co. (Indiana)

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Chicago | 14.3 | 15.3 | 4.0 | 9.7 |
| Decatur, Ill. | 16.0 | 18.0 | 4.0 | 10.2 |
| E. St. Louis | 16.0 | 14.5 | 4.0 | 9.5 |
| Joliet | 14.2 | 16.2 | 4.0 | 10.2 |
| Peoria | 14.7 | 13.9 | 4.0 | 10.2 |
| Quincy | 16.6 | 17.1 | 4.0 | 10.0 |
| Davenport, Ia. | 16.6 | 17.1 | 4.0 | 10.1 |
| Des Moines | 14.0 | 17.1 | 4.0 | 8.0 |
| Mason City | 16.6 | 17.1 | 4.0 | 9.3 |
| Sioux City | 12.9 | 12.9 | 4.0 | 9.7 |
| Duluth, Minn. | 17.2 | 19.2 | 4.0 | 10.4 |
| Mankato | 16.8 | 16 8 | 4.0 | 10.3 |
| Minneapolis | 15.4 | 17.4 | 4.0 | 10.4 |
| LaCrosse, Wis. | 18.3 | 20.3 | 4.8 | 10.8 |
| Green Bay | 17.7 | 19.7 | 5.0 | 10 2 |
| Milwaukee | 17.1 | 19.1 | 5.0 | 9.7 |
| Madison | 17 4 | 19 4 | 5 0 | 9.9 |
| Detroit, Mich. | 16.0 | 18.0 | 4.0 | 10.5 |
| Grand Rapids | 16.7 | 17.7 | 4.0 | 10.2 |
| Saginaw | 17 0 | 18.0 | 4.0 | 10.5 |
| Evansville, Ind. | 17.7 | 19 7 | 5 0 | 10 0 |
| Indianapolis | 17.9 | 19.4 | 5.0 | 10.2 |
| South Bend | 18 2 | 20.2 | 5.0 | 10.5 |
| Fargo, N. Dak. | 17.9 | 19 9 | 4 0 | 12.1 |
| Huron, S. Dak. | 18.8 | 20.8 | 5.0 | 11 4 |
| Sioux Falls | 18.4 | 20.4 | 5.0 | 10 9 |
| Kans. C., Mo.* | 15 0 | 15 0 | 4 0 | 9.2 |
| Springfield | 15.1 | 17.1 | 3.5 | 9.1 |
| St. Louis | 15.0 | 17.0 | 3.5 | 8.7 |
| St. Joseph* | 15 3 | 15 0 | 4 0 | 8.8 |
| Wichita, Kans. | 14.6 | 16.6 | 4.0 | 10 2 |
| Bartlesville, Ok. | 16.0 | 18.5 | 5.0 | 10.5 |

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Discounts to dealers, effective March 1, 1934: Undivided accounts, 4 cents a gallon on Red Crown Ethyl and Standard Red Crown, divided accounts, 3½ cents a gallon on Red Crown Ethyl and Standard Red Crown.

### Stanolex Furnace Oil in Chicago

Effective June 27, 1934, f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 8¼ cents. Effective May 16, 1934, No. 2 (30-34 stw. zero), under 150 gallons, 7¾ cents; No. 3 (22-26 zero), under 150 gallons, 7½ cents; No. 4 (12-16 zero), under 400 gallons, 6 cents; viscosity of No. 4, 90-115 at 100° F.; No. 5, under 400 gallons, 5¾ cents. For deliveries above stated quantities deduct 1 cent.

### Naphtha

| | Tank wagon* |
|---|---|
| Oleum spirits | 16.9 |
| V.M.&P. naphtha | 18.0 |
| Cleaners' naphtha | 18 0 |
| Stanisol | 18.0 |

*Prices include 3-cent Illinois tax, but not 1-cent Federal tax.

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

### Southern District

STANDARD OIL CO. (KENTUCKY)

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Atlanta, Ga. | 19.0 | 22.0 | 7.0 | 14.5 |
| Augusta | 20.0 | 22.0 | 7.0 | 14.5 |
| Macon | 20.0 | 22.0 | 7.0 | 14.5 |
| Savannah | 20.0 | 22.0 | 7.0 | 14.0 |
| Birm'ham, Ala. | 21.5 | 23.5 | 8.0 | 12.0 |
| Mobile | 20.5 | 22.5 | 8.0 | 12.0 |
| Montgomery | 22.5 | 24.5 | 8.0 | 15.0 |
| Jackson, Miss. | 19.5 | 21.5 | 7.0 | 13.0 |
| Vicksburg | 17.5 | 19.5 | 7.0 | 14.0 |
| Jack'ville, Fla. | 20.0 | 22.0 | 8.0 | 11.5 |
| Miami | 20.0 | 22.0 | 8.0 | 13 5 |
| Pensacola | 18.0 | 20.0 | 8.0 | 13.5 |
| Tampa | 20.0 | 22.0 | 8.0 | 12.5 |
| Lexington, Ky. | 18.5 | 20.5 | 8.0 | 11 5 |
| Covington | 17.5 | 19.5 | 6.0 | 11.5 |
| Louisville | 18.0 | 20.0 | 6.0 | 11.5 |
| Paducah | 18.5 | 20.5 | 6.0 | 11.0 |

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

### Southwestern District

MAGNOLIA PETROLEUM CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Dallas, Tex. | 17.0 | 19.0 | 5.0 | 6.0 |
| Fort Worth | 17.0 | 19.0 | 5.0 | 7.0 |
| Houston | 16.0 | 18.0 | 5.0 | 8.5 |
| San Antonio | 16.0 | 18.0 | 5 0 | 8.5 |
| El Paso | 18.0 | 20.0 | 5.0 | 11.0 |
| Muskogee, Ok. | 14.0 | 16.0 | 5.0 | 7.5 |
| Okla. City | 15.0 | 17.0 | 5.0 | 8.5 |
| Tulsa | 16.0 | 18.0 | 5.0 | 8.5 |
| Ft. Smith, Ark. | 16.0 | 18 0 | 5.0 | 8.0 |
| Little Rock | 14.0 | 16 0 | 7.5 | 9 0 |
| Texarkana | 17.0 | 19.0 | 5.0 | 7.0 |

### Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Atl'tic City, N.J. | 19.0 | 18.5 | 4.0 | 10.0 |
| Newark | 18.3 | 17.8 | 4.0 | 9.5 |
| Annapolis, Md. | 19.6 | 19.1 | 5.0 | 10.0 |
| Baltimore | 19.1 | 18.6 | 5.0 | 9.5 |
| Cumberland | 20.6 | 20.1 | 5.0 | 12.7 |
| Wash'g'n, D. C. | 17.3 | 16.8 | 3.0 | 11.5 |
| Danville, Va. | 21.7 | 21.2 | 6.0 | 12.9 |
| Norfolk | 20.3 | 19.7 | 6.0 | 11.3 |
| Petersburg | 21.0 | 20.5 | 6.0 | 11.4 |
| Richmond | 20.6 | 20.1 | 6.0 | 11.7 |
| Roanoke | 21.8 | 15.4 | 6.0 | 12.9 |
| Charle'n, W. Va. | 20.0 | 19.5 | 5.0 | 12.6 |
| Parkersburg | 19.3 | 15.4 | 5.0 | 11.2 |
| Wheeling | 20.0 | 19.5 | 5.0 | 12.2 |
| Charlotte, N. C. | 23.4 | 22.5 | 7.0 | 13.5 |
| Hickory | 23.7 | 23.0 | 7.0 | 13.7 |
| Mt. Airy | 23.7 | 23.2 | 7.0 | 13.8 |
| Raleigh | 23.2 | 22.5 | 7.0 | 13.3 |
| Salisbury | 23.5 | 21.0 | 7.0 | 13.6 |
| Charleston, S. C. | 21.2 | 20.7 | 7.0 | 11.3 |
| Columbia | 23.0 | 22.0 | 7.0 | 13.2 |
| Spartanburg | 23.4 | 22.4 | 7.0 | 13.5 |

Price basis to dealers: Divided dealers at dealer price, which is 2½ cents above tank car; undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

### Nebraska

STANDARD OIL CO. OF NEBRASKA

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Omaha | 17.0 | 19.0 | 5.0 | 9.0 |
| McCook | 17.7 | 18.4 | 5.0 | 6.9 |
| Norfolk | 17.0 | 17.0 | 6.0 | 9.0 |
| North Platte | 17.8 | 18.0 | 5.0 | 9.0 |
| Scottsbluff | 18.5 | 19.3 | 5.0 | 9.0 |

Note—Discount to dealers, including any rentals under lease and agency agreements: Undivided accounts, Standard Red Crown and Red Crown Ethyl Gasoline 4 cents, Reliance (third brand) 3 cents, under service station price. Divided accounts, Standard Red Crown Ethyl Gasoline 3½ cents, Reliance (third brand) 2½ cents, under service station price. Discounts to consumers covered only by form CD-1, official commercial consumer contract.

### Central South District

STANDARD OIL CO. OF LOUISIANA

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| N. Orleans, La. | 20.8 | 15.0 | *7.0 | †10.0 |
| Baton Rouge | 20.2 | 19.7 | 6.0 | †12.0 |
| Alexandria | 21.1 | 19.0 | *7.0 | †10.0 |
| Lafayette | 21.3 | 20.8 | *7.0 | †12.0 |
| Lake Charles | 21.2 | 20.7 | *7.0 | †12.0 |
| Shreveport | 19.0 | 18.5 | 6.0 | †12.0 |
| Knoxville, Tenn. | 24.7 | 21.5 | 8.0 | 13.0 |
| Memphis | 23.1 | 16.0 | 8.0 | 10.5 |
| Chattanooga | 24.5 | 21.5 | 8.0 | 12.0 |
| Nashville | 24.0 | 16.0 | 8.0 | 11.0 |
| Bristol | 24.5 | 17.3 | 8.0 | 14.0 |

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Price bases to dealers: Divided dealers at dealer price, which is 2¼ cents above tank car; undivided dealers at dealer price less one-half cent.

### Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

| | Gasoline: Tank wagon† | Gasoline: Posted retail | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| San Francisco | 17.5 | 19.5 | 4.0 | 12.5 |
| Los Angeles | 15.25 | 17.5 | 4.0 | 12.5 |
| Fresno, Calif. | 18.0 | 20.0 | 4.0 | 14.0 |
| Phoenix, Ariz. | 21.5 | 23.5 | 6.0 | ‡16.0 |
| Reno, Nev. | 20.5 | 22.5 | 5.0 | 15.5 |
| Portland, Ore. | 20.0 | 22.0 | 6.0 | 13.5 |
| Seattle, Wash. | 20.0 | 22.0 | 6.0 | 13.5 |
| Tacoma | 20.0 | 22.0 | 6.0 | 13.5 |
| Spokane | 23.0 | 25.0 | 6.0 | 18.0 |

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5 cents state tax.

### Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Philadelphia, Pa. | 15.5 | 17.5 | 4.0 | 10.0 |
| Pittsburgh | 16.0 | 18.0 | 4.0 | 10.0 |
| Allentown | 15.5 | 17.5 | 4.0 | 10.0 |
| Erie | 16.0 | 18.0 | 4.0 | 9.0 |
| Scranton | 16.0 | 18.0 | 4.0 | 10.0 |
| Altoona | 16.0 | 18.0 | 4.0 | 10.0 |
| Dover, Del. | 16.0 | 18.0 | 4.0 | 10.0 |
| Wilmington | 16.0 | 18.0 | 4.0 | 9.0 |
| Springf'd, Mass. | 15.5 | 17.5 | 4.0 | 8.75 |
| Worcester | 16.5 | 18.5 | 4.0 | 9.0 |
| Hartford, Conn. | 15.0 | 17.0 | 3.0 | 8.5 |
| New Haven | 14.5 | 16.5 | 3.0 | 8.5 |
| Providence, R.I. | 13.5 | 15.5 | 3.0 | 8.5 |

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

### New York and Part of New England

STANDARD OIL CO. OF NEW YORK

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Albany, N. Y. | 16.5 | 17.5 | 4.0 | 9.0 |
| Met. New York | 16.5 | 17.5 | 4.0 | 8.5 |
| Buffalo | 17.5 | 18.5 | 4.0 | 9.0 |
| Rochester | 17.5 | 18.5 | 4.0 | 9.25 |
| Syracuse | 17 0 | 18.0 | 4.0 | 9.25 |
| Boston, Mass. | 16.5 | 17.5 | 4.0 | 8.5 |
| Portland, Me. | 18.2 | 19.2 | 5.0 | 8.75 |
| Manch't'r N. H. | 19.2 | 20 2 | 5.0 | 9.0 |
| Burlington, Vt., | 19.8 | 20.8 | 5.0 | 9.75 |

Commercial consumers allowed 2 cents discount below service station prices in accordance with CD-1 of oil industry's code.

### Ohio

STANDARD OIL CO. OF OHIO

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Ohio points | 17.5 | 19.5 | 5.0 | *13.5 |

*Includes state tax of 1 cent, effective July 22.

### Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

| | Gasoline: Tank wagon | Gasoline: Service station | Gasoline: Incl'ds tax of | Kero. tank wagon |
|---|---|---|---|---|
| Hamilton, Ont. | †21.5 | 24.5 | 6.0 | 17.5 |
| Toronto, Ont. | †21.5 | 24.5 | 6.0 | 17.5 |
| Brandon, Man. | 30.3 | 33.3 | 7.0 | 21.5 |
| Winnipeg, Man. | 23.7 | 31.7 | 7.0 | 20.3 |
| Regina, Sask. | 29.0 | 32.0 | 6.0 | 21.5 |
| Saskatoon, Sask. | 31.8 | 34.8 | 6.0 | 24.3 |
| Edmonton, Alta. | 31 3 | 34.3 | 6.0 | 23.7 |
| Calgary, Alta. | 30.5 | 31.5 | 6.0 | 21.0 |
| Vancouver, B.C. | †28.0 | 31.0 | 7.0 | |
| Montreal, Que. | 24.0 | 27.0 | 6.0 | |
| St. John, N.B. | 27.5 | 31.5 | 8.0 | |
| Halifax, N. S. | 26.0 | 30.0 | 6.0 | |

Imperial gallon used in Canada. †Government service station price.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents off service station price and 1 cent additional to 100 per cent accounts.

## Retail Price Changes

**Regular-Grade Gasoline and Kerosene**

Standard Oil Co. (Indiana) June 2 reduced station gasoline 1 cent in Grand Rapids and Saginaw.

Magnolia Petroleum Co. June 21 reduced tank wagon and station gasoline 1 cent in San Antonio. June 1, advanced tank wagon and station gasoline 2 cents in Oklahoma City. June 17, reduced tank wagon and station gasoline 3½ cents in Little Rock.

Standard Oil Co. (Kentucky) June 18 reduced tank wagon gasoline 1 cent in Atlanta. June 15, advanced tank wagon and station gasoline 1 cent in Vicksburg. June 21, advanced tank wagon and station gasoline 4 cents in Paducah.

Standard Oil Co. of New Jersey June 15 advanced station gasoline 4½ cents in Richmond and Petersburg.

Standard Oil Co. of Louisiana June 20 reduced station gasoline 1.7 cents in Knoxville. June 22, reduced station gasoline 1½ cents in New Orleans. June 26, reduced station gasoline 1.6 cents in Alexandria. June 20, reduced station gasoline one-half cent in Chattanooga; June 21, reduced it 1 cent further; June 22, reduced it 1 cent further.

Standard Oil Co. of California June 26 advanced tank wagon and station gasoline 2½ cents in California and 2 cents in Phoenix.

### CRUDE OIL PRICE CHANGES

While not changing its prices posted in the Rocky Mountain area last September, the Stanolind Oil & Gas Co. announces that effective July 1, 1934, it will purchase oil in that territory subject to its applicable division orders and to a deduction for losses by evaporation and b.s. and water and other impurities. The deductions allowed are as follows: Frannie, Wyo., 2 per cent; Elk Basin, Wyo., 1 per cent; Dutton Creek, Wyo., 1 per cent; Iles, Colo., 2 per cent; Salt Creek, Wyo., 2 per cent; Hamilton Dome, Wyo., 2 per cent; Hogback, N. Mex., 2 per cent; Greybull, Wyo., 1 per cent and Torchlight, Wyo., 1 per cent. Continuing, the announcement says: "If any other basis of computing volume other than the above stated is used or required, the prices posted will be adjusted so that the amount will be on a basis of volume as above stated." The company established a price for Hamilton Dome heavy below 18 gravity, 52 cents per barrel and 18 gravity and above, 62 cents. This is a new posting.

## Dubious Outlook in Group 3 Territory

(Continued from Page 24)

libood of the plan working out profitably for them.

Jobbers taking this 10-pound product at 2¾ cents in the last week were said to be mixing three cars of it with one car of low-octane straightrun gasoline, thus getting a good grade of motor fuel on which they were able to make a larger margin of profit than if they had bought the straightrun gasoline only.

Kerosene production was keeping even with consumption and there was no change in prices. The week in gas oils and fuel oils was uneventful, with prices unchanged.

Neutrals were steady. Bright stocks were slow and prices receded a half cent throughout the list. Wax was weak.

# NEWS FOR SALES DEPARTMENTS

## Fuel Oil Stocks Now at Lowest Level in 10 Years

The most outstanding improvement in the oil industry's statistical position during the past six months has been the sharp reduction in the stocks of gas oil and fuel oil. Since September these have been reduced to the lowest level in 10 years. This is the first reversal in the upward trend of these stocks since the war.

The shrinkage in stocks has been accompanied by an improvement in prices. Currently posted prices are the best since the middle of 1930 and are in the neighborhood of 100 per cent above the lows reached in 1931 and 1932.

Without the limit on imports of petroleum products placed early in 1933 the recent betterment in the gas and fuel oil inventory position would probably not have been possible. Increased demand would most likely have resulted in larger imports. However, as imports of crude oil and fuel oil have been about uniform for the past 23 months, the three above mentioned factors have been more directly responsible for the improvement.

California's gas and fuel inventory position betterment has been much more marked than that of other sections. The reason is that California produces a greater proportion of lower gravity crude oil than other sections, so that its peak stocks of heavy oils were therefore relatively higher. Furthermore, the rise in the use of gas and fuel oils in the past few months has been so rapid that eastern sections of the country have been forced to draw more heavily on California stocks for requirements.

American Petroleum Institute figures reveal that in the seven months from November, 1933, to May, 1934, inclusive, receipts of California gas and fuel oil at Atlantic and Gulf Coast ports amounted to 11,298,000 bbls., as compared with 2,625,000 bbls. in the corresponding period a year previous.

A.P.I. figures further show that from September 30, 1933, to June 16, 1934, national stocks of gas and fuel oil declinder from 131,566,000 bbls. to 104,263,000 bbls. California stocks in the same period dropped from 99,829,000 bbls. to 78,794,000 bbls.

A study of the post-war trend of fuel oil prices and inventories reveals some interesting data. With steel production and navigation as well as other industrial activity at a peak during the war period, fuel oil prices skyrocketed and inventories dropped to alarmingly low levels. The sudden letdown in all industrial activity after the war was followed by a steady upward trend in stocks, which was accentuated by the opening up of new oil fields, including the California area with its heavy crude early in the twenties.

While fuel oil use increased materially during the boom period which ended in 1929, increasingly higher crude oil production continued to inflate inventories.

Prices dcring the period of rising stocks fluctuated widely at first, moving up to a postwar peak in 1920. For example, in 1919 fuel oil of 18 to 22 degrees gravity dropped to about 80 cents a barrel f.o.b. Oklahoma. The following year it moved up sharply to reach a peak of about $3.50, only to drop back just as rapidly to touch a low of 35 cents in 1921. From then until 1927 its price ranged between 75 cents and $1.50 a barrel. From 1927 until the middle of 1931 the decline was almost steady, price finally reaching a bottom of around 25 cents a barrel. The recent improvement was the first real move in either direction since 1931.

### MICHIGAN JOBBERS MEET

MUSKEGON, Mich., July 2.—About 150 gasoline distributors, service station attendants and refinery officials of Michigan Zone 11, marketing section, under the National Recovery Administration, including Muskegon, Oceana and Newaygo Counties, attended a code meeting in Muskegon last week.

Guilford S. Turner, sales manager of the Old Dutch Refining Co. and chairman of the Zone 11 code committee, presided. Talks were given by D. W. Carmichael, of Detroit, chairman of the state code committee, and R. C. Van Antwerp, Muskegon district sales manager of the Standard Oil Co. of Indiana.

### PETROLEUM EXPORTS FOR APRIL

The following statistics of imports and exports of petroleum and its products for the month of April, 1934, are furnished by the U. S. Department of Commerce:

| | Barrels |
|---|---|
| Natural gasoline | 150,970 |
| Gasoline, naphtha, in bulk | 2,301,387 |
| Illuminating oil, in bulk | 1,042,022 |
| Gas oil and distillate fuel oil | 1,460,251 |
| Residual fuel oil | 1,227,425 |
| Lubricating oil, red and pale | 420,665 |
| Lubricating oil, black | 39,781 |
| Lubricating oil, cylinder | 240,130 |
| | Pounds |
| Lubricating greases | 8,294,704 |
| Paraffin wax, unrefined | 5,795,689 |
| Paraffin wax, refined | 9,340,191 |
| | Tons |
| Petroleum asphalt | 12,758 |
| Petroleum coke | 7,703 |

### MAY DELIVER DIRECT TO ARMY

To aid the summer army maneuvers, Administrator Ickes approved the tank wagon delivery of gasoline as follows:

"Under the provisions of Article 5, Rule 18, and until further notice, permission of the Planning and Coordination Committee is hereby granted to refiners, wholesalers, jobbers and distributors to deliver gasoline and/or motor fuels from tank wagons or trucks directly to the fuel tanks attached to or part of trucks, tractors and other motorized equipment belonging to the military forces of the United States, or of any state when such trucks, tractors and other motorized equipment are being used on special manuevers away from their base of supply, or when such trucks, tractors and other motorized equipment are being moved from one military post to another." The exception became effective June 22.

### CANADIAN ALCOHOL MOTOR FUEL

OTTAWA, Canada, July 2.—The National Research Laboratories here have issued a revised report containing the results of a further study of the possibility of using alcohol made from grain as a motor fuel.

The report states that if one-tenth of the annual consumption of motor fuel in Canada were replaced by alcohol made from wheat, some 25,000,000 bushels would be needed.

The report estimates for the mixed fuel an increase in cost by from 2 to 3 cents an imperial gallon, assuming the use of No. 5 wheat at 60 cents a bushel, Fort William basis.

Engine tests carried out in the National Research Laboratories with mixtures containing 5, 10 and 15 per cent alcohol show that the alcohol is an excellent antiknock agent. The 15 per cent blend gave somewhat more power than gasoline alone, but fuel consumption was higher.

The report notes that in the near future motor fuel produced by the hydrogenation of coal may be a competitor on the motor fuel market. This will be finally demonstrated in the course of a year or two as a result of a plant being built in England under a subsidy arrangement with the British government.

## Volume of Road Oil Sales Decreased by One-Fourth

Decreased construction and maintenance of highways were reflected in a decrease of 24.5 per cent in sales of road oil in 1933, compared with 1932. Petroleum refining companies in the United States sold 8,264,824 bbls. of road oil in 1932 and 6,238,898 bbls. in 1933, according to statistics compiled by the Bureau of Mines, Department of the Interior. However, some of the apparent decrease in the demand for road oil may be explained by the substitution of cut-back asphalts for road oils, especially in the construction of low-cost types of surfacing. This is evidenced by the increase in sales of cut-back asphalts from 2,425,000 bbls. in 1932 to 2,797,000 bbls. in 1933. Moreover, some road oils, as sold, are in fact blends of residual oil and lighter petroleum distillates, and are difficult to distinguish in practice from cut-back asphalts.

Because of higher prices, the value obtained from sales of road oil decreased only 13.9 per cent (from $7,306,332 in 1932 to $6,289,119 in 1933). The average value of road oil sold in the United States was $0.884 in 1932 and $1.008 in 1933. In the East Coast district the average sales value of road oil increased from $1.156 per barrel in 1932 to $1.44 in 1933. Refineries of the Indiana-Illinois-Kentucky district sold road oil at an average price of $0.798 in 1932 and of $0.911 in 1933. Producers of the Oklahoma-Kansas-Missouri district obtained an average price of $0.765 in 1932 and of $0.903 in 1933. On the other hand, the average value of road oil sold at California refineries declined from $0.899 in 1932 to $0.878 in 1933.

### ROAD OIL SOLD BY PETROLEUM REFINERIES IN THE UNITED STATES

| | 1933 | |
|---|---|---|
| District— | Barrels | Value |
| East Coast | 863,656 | $1,243,813 |
| Appalachian | 137,868 | 222,770 |
| Ind.-Ill.-Ky. | 1,828,844 | 1,666,754 |
| Okla.-Kans.-Mo. | 661,953 | 597,792 |
| Texas: | | |
| Gulf Coast | 165,141 | 199,619 |
| Rest of State | 61,286 | 38,691 |
| Total Texas | 226,927 | 238,310 |
| Louisiana-Arkansas: | | |
| Louisiana Gulf Coast | 48,814 | 68,469 |
| N. La. and Arkansas | 101,241 | 63,866 |
| Total La. and Ark. | 150,055 | 132,334 |
| Rocky Mountain | 484,505 | 531,582 |
| California | 1,885,050 | 1,655,764 |
| Grand total | 6,238,898 | 6,289,119 |

Petroleum refineries in the United States reported the production of 5,534,455 bbls. of road oil in 1933, compared with 6,879,000 bbls. in 1932. The refinery output of road oil was augmented in 1933 by 1,027,814 bbls. of other petroleum products, chiefly fuel oil, transferred to road oil stocks, compared with 1,579,590 bbls. similarly transferred in 1932. Stocks of road oil, and of transferred fuel and other oils, held at refineries in the United States, increased from 571,333 bbls. on December 31, 1932, to 832,738 bbls. on December 31, 1933.

By far the greater part of the road oil sold in the United States in 1932 and 1933 was made from domestic petroleum. Only 10.3 per cent of the total in 1932 and only 11.6 per cent in 1933 were made from foreign crude, imported chiefly from Venezuela and Mexico. Of the road oil made from foreign crude, 86.4 per cent was sold by refineries of the Atlantic Seaboard in 1932 and 88 per cent in 1933; and the rest in Gulf Coast refineries of Louisiana and Texas.

### CITY OPERATES STATION

The city council of Osceola, Ark., has voted to go into the retail gasoline and oil business.

Announcement was made that several filling stations have been taken over by the city government and will be operated to force down the price. The prices reported charged by stations in the county are 6 or more cents higher than gasoline is selling for at Marion and in Missouri, across the county line north.

The councilmen charge that not only the consumers, but local dealers, are being discriminated against by a price fixing agreement between the major oil companies operating stations in Osceola.

### MAY GET BLUE EAGLES

Distribution of Blue Eagle placards to dealers and operators in the oil industry who are complying with the oil code was authorized on June 25 by Secretary of the Interior Harold L. Ickes, the oil administrator.

The placards will be issued under the supervision of the division of investigations of the Department of the Interior. They will be revoked immediately upon violation of the code by the companies or persons to whom issued.

Companies and operators desiring the placards should apply to the state or regional committees of the Planning and Coordination Committee representing the industry under the oil code, which will forward the application to the division of investigations' agent in the region.

"I consider the distribution of the Blue Eagle placard, symbolic of the National Industrial Recovery program, an opportunity for the great majority of persons who are complying with the oil code to identify themselves as loyal co-workers in our mutual efforts to restore and stabilize the petroleum industry," Administrator Ickes said.

"I hope that the industry will continue to co-operate with us."

### TRY HEAVY DIESELS

TOPEKA, Kans., July 2.—An experimental locomotive, equipped with Diesel engines and capable of hauling heavy transcontinental trains at a speed of approximately 98 miles an hour, will be placed in service by the Santa Fe Railroad this fall, W. J. Black, general passenger traffic manager for the road, said here recently.

The new type of locomotive will haul present passenger equipment. If found efficient, it may be used as a pattern for several engines to be placed in service on the longer passenger hauls next summer, Mr. Black said.

Experiments with the new locomotive were described as more practical than the construction of streamline trains because of the huge financial outlay required for the latter.

### GULF BULK PLANT

The Gulf Refining Co. has approved plans for new bulk storage and distribution plant at Bay City, Mich., where 14 acres was recently acquired. Bids will soon be asked for equipment for storage and warehouse building and for a motor truck garage unit. Cost, including equipment, will approximate $225,000.

### NOVA SCOTIA GASOLINE LAW

HALIFAX, Nova Scotia, July 2.—Regulations issued by the provincial government under authority of the gasoline legislation passed at the last session of the legislature require those selling gasoline to post clearly the name of the brand, grade or quality, and per gallon price.

## Proper Design of Car Would Permit Increase

(Continued from Page 18)

1922 model which was particularly bad in its vapor-locking characteristics.

Of the 42 cars actually tested for vapor lock under operating conditions when idling after a period of hard driving, 41 would be free from vapor lock, and one might be expected to experience difficulty when using fuels of the maximum Reid vapor pressure and at the maximum atmospheric temperature within the limits recommended by the section on vapor lock.

Computed points from the data plotted in Figures 1 and 2 as obtained by Ainsley, Baker and Phillips[1] on the 8-cylinder, V-type motor, would indicate that this car which is also particularly sensitive to vapor lock under idling conditions would also experience difficulty. But the data are not included in Figure 3 because they are not direct experimental data but are computed from two separate tests.

### Accelerating After Idling

Of the 52 cars tested when accelerating after idling (Figure 3), 5 points supplied by T. A. Boyd fall below the line, and 45 points lie above the line, indicating that under these conditions of operation, vapor lock might be expected on 5 cars out of the 52 tested when using fuels of the maximum Reid vapor pressure at the maximum atmospheric temperature within the limits recommended by the section on vapor lock.

### Constant Speed Below 40 Miles Per Hour

Of the 51 cars tested at constant speeds up to 40 miles per hour (Figure 3), 49 cars would be entirely free from vapor lock and 2 cars, the same 8-cylinder, V-type motor mentioned above and another out-moded car privately reported, might experience difficulty with fuels of the maximum vapor pressure at the maximum atmospheric temperature within the limits recommended by the section on vapor lock.

### Constant Speed Over 40 Miles Per Hour

When driving at high speeds (over 40 m.p.h.) the data taken on 17 cars (Figure 3) indicate that those cars with the worst vapor-locking characteristics under idling conditions would be reasonably free from vapor lock, and that 14 of the 17 cars would be entirely free from vapor lock with fuels of the maximum vapor pressure within the limits recommended by the section on vapor lock. Only one point reported by T. A. Boyd is decidedly below the line.

### Recommendations on Vapor Lock

It is a practical impossibility to insure absolute freedom from vapor lock in all cars under all conditions of service and yet furnish fuels which will give satisfactory starting and acceleration. Clearly a compromise must be effected. This is indicated by the charge to the section on vapor lock to recommend limits and a method of test that would insure "reasonable protection to the user so far as the fuel is concerned." This might be taken to indicate that the committee should confine its attention to those cars which are reasonably good in their vapor-locking characteristics and set limits which will insure freedom from vapor lock on these cars only. Instead the section has considered practically all cars on the road, those excessively bad in vapor-locking characteristics as well as those of reasonable design. The complete data have been included in this paper and presented in the various figures.

In recommending new specifications which have not been previously in effect, it is always desirable to adopt limits which closely approximate present commercial practice. This point has received careful consideration in the following limits recommended by the section on vapor lock to insure reasonable protection to the user so far as the fuel is concerned:

"That the Reid vapor pressure (A.S.T.M. Method D 323—32 T) of fuels as delivered from the service station pump or to the fuel tank of the vehicle for use at maximum atmospheric temperature of 100° F. should not exceed 8 pounds, at a maximum atmospheric temperature of 85° F. should not exceed 10 pounds, and at a maximum atmospheric temperature of 75° F. should not exceed 12 pounds."

It is clear that if all the cars on the road were of as good design in regard to vapor-locking characteristics as the average of the best cars that have been tested, these vapor-pressure limits could be raised about 3 to 4 pounds, corresponding to 11 pounds for a maximum atmospheric temperature of 100° F., 14 pounds for a maximum atmospheric temperature of 85° F., 16 pounds for a maximum temperature of 75° F., and about 19 pounds for a maximum temperature of 65° F. and insure entire freedom from vapor lock under all normal conditions. Perhaps such good design in all cars is not to be expected immediately, but we should be able to expect that all cars will improve their fuel systems so that the above limits will insure reasonable freedom from vapor lock in so far as the fuel is concerned, soon after the cars now in service are retired. At least these limits just mentioned should be our immediate object as they will in fact insure reasonable freedom from vapor lock so far as the fuel is concerned, that is, reasonable freedom from vapor lock in all cars as good as the average of the best cars now on the road.

For the immediate present, the recommended limits of 8 pounds for a maximum atmospheric temperature of 100° F., 10 pounds for a maximum atmospheric temperature of 85° F., and 12 pounds for a maximum atmospheric temperature of 75° F. will insure reasonable freedom from vapor lock under all ordinary driving conditions including high-speed operation. Some difficulty is to be expected on a limited number of cars which are particularly bad offenders in regard to vapor lock whenever the speed is reduced, or the motor is idled, after sustained high-speed driving or heavy pulling. But it must be emphasized that no more difficulty will be experienced when using fuels of these recommended vapor-pressure limits than is now actually experienced in operation, because the recommended vapor-pressure limits are in close agreement wtih present commercial usage.

A careful and complete survey covering the entire country[5] showed these recommendations to be closely representative of commercial practice except that present commercial practice allowed an average vapor pressure of 8 pounds under conditions where the maximum temperature is over 105° F. This is probably why vapor lock is confined largely to warm weather and popularly classed as a hot-weather complaint.

### Conclusion

Adoption of the recommended vapor-pressure limits will insure reasonable protection from vapor lock so far as the fuel is concerned. The recommended limits insure the same freedom from vapor lock as is now furnished the car user except in extremely warm weather when greater protection will be insured by the adoption of these limits. Improvement in motor car design to the extent that all cars are as good as the best would allow an increase of about 4 pounds in these limits.

### REFERENCES


[1]W. G. Ainsley, L. E. Baker, and E. B. Phillips, "Methods of Testing Automobiles for Potential Vapor Lock," Proceedings, Am. Petroleum Inst., Section 3, Volume 14, November, 1933, p. 22. (3 cars.)

[2]O. C. Bridgeman, H. S. White and F. B. Gary, "Gasoline Vapor Pressures Permissible with 1931 Motor Cars," Proceedings, Am. Petroleum Inst., Section 3, twelfth annual meeting, December, 1931, p. 40. (47 cars.)

[3]O. C. Bridgeman, H. S. White, and F. B. Gary, "The Present Status of the Vapor-Lock Problem," Proceedings, Natural Gasoline Association of America, twelfth annual convention, Tulsa, May, 1933, p. 74. (51 cars.)

[4]G. G. Brown, "The Volatility of Motor Fuels," Engineering Research Bulletin No. 14, University of Michigan, May 1930, p. 274. (4 cars.)

[5]W. Mendius and W. G. Ainsley, "Conservation of Volatile Hydrocarbons," fourth midyear meeting, American Petroleum Institute, Pittsburgh, May 24, 1934


## Unforeseen Expenses in Drilling Wildcats in Texas

(Continued from Page 10)

(Type HUH-26), inclosed drive chains and all enclosed new oil bath type rotary table. This leaves the derrick floor entirely free of machinery, giving more room and no hindrance while making up and breaking down the drill pipe.

### Going to 7,500 Feet

On top of the heavy duty derrick is a Baash-Ross single pin crown block, the lower complement being a Beaumont Iron Works traveling block carrying a Byron Jackson Triplex 150 elevator (Wilson). One-inch Broderick & Bascom and American drilling line has been handling the heavy drill pipe and casing loads, and is yet to receive still greater loads as the hole gets deeper. Seventy-five hundred feet of new drill pipe has been ordered, which is considered a sure sign of going to at least 7,500 or 8,000 feet. Martin-Decker weight indicators are used in checking weight of pipe at all times, the drilling pipe now in use being manufactured by the National Tube Co. It is tested to 2,250 pounds. Another safety device used is the Baker Oil Tools, Inc., drill pipe floats connected with the drill pipe. The derrick and operating equipment is relieved of excessive weight which would otherwise cause wear and tear on wire lines, brakes and other equipment by use of these floats. Bettis protectors are used to guide and protect the drill pipe.

Wilson casing tongs came in for their share of the work in running the strings of pipe in the hole. So far 164 feet of 20-inch surface pipe has been set and cemented, and 1,864 feet of 13⅜-inch National pipe has been cemented in the hole. The test is now past 3,790 feet, and the company does not intend running any more casing unless necessary. In case of an oil or gas showing more casing will probably be run.

A Texas Iron Works line guide, attached to derrick girder above the floor, shown in accompanying picture, serves in guiding wire line between crown block and drum. A 6-inch National Type "AA" swivel top on the drill pipe connects it with the Gulfco Diamond rotary hose.

Hughes and Reed 12 and 18-inch fishtail and rock bits are used, the company's reamers also being used in the drill pipe makeup, one of each being set above the bit, the first 30 feet up and the second one 30 feet above the first. However, difficult drilling may be encountered as the test gets deeper. One Ordovician wildcat now drilling in West Texas is making only about 10 feet of hole per day, chert slowing down the drilling to this few feet each 24 hours.

Dropping down 8 feet into the engine house to look over the machinery, which is well guarded by specially constructed tubing and wire safety devices, the clutch and transmission, manufactured by the Portable Rig Co. of Houston, is to the right, just at the foot of the stair leading to the derrick floor. The Timken bearing fitted Ideal drawworks (Type HUH-26) is connected thereto, chain belts leading to the turntable and power shaft for catheads being out of the way and guarded so as to prevent any hazards to the crew. This part of the rig and drilling equipment may be seen in the accompanying photograph, one of the best pictures portraying the location of the machinery in connection with the derrick and derrick floor. The driller, located at the controls on the derrick floor, can be seen at the right top of the picture.

A Parkersburg Rig and Reel hydromatic brake insures proper and certain braking on the drawworks, another safety factor in use on the equipment.

### Workers Well Guarded

Power from the two Waukesha motors is transmitted by a series of Allis texrope and Goodrich V-type belts and pulleys, the motors so arranged and connected that either one or both can operate the slush pumps and drawworks. Another picture, showing location of motors and machinery in shed adjacent to the derrick, also shows motors and transmission, with everything well guarded to prevent accidents to the men who sometimes have to pass around the machinery.

A Century direct current generator powered by a four-cylinder Ford motor serves to generate electric power and lights for the rig and camp, the latter being erected nearby to house the drilling crew and geologist who is assigned to watching the cuttings taken from the well and observe any formation changes as drilling progresses.

A Wilson Snyder 7x18 and Ideal 7¼x14 slush pump is connected up, the latter being operated by a smaller auxiliary motor than the other two in service. The latter pump, manufactured by the National Supply Co., is equipped with Ideal valves. An Oil Well flexible hose connection from the pumps to the slush pit handles the drilling mud. Baroid is being used in drilling.

Leading to the slush pit from around on the front of the rig is a wooden trough delivering return from the bottom of the hole. Geological samples of the various formations drilled are taken from this trough, such samples being "grabbed" at every 5 feet of drilling. A long sample "stall" or rack, made out of timber, has been placed near the trough for dumping the samples for sacking for shipment, the economy laying special stress on obtaining correct and full geological information on the test.

Drill stem tests, made under supervision of a Halliburton representative, are made as frequently as deemed necessary so as to allow no chance for the possible passing up of a gas or oil-bearing streak in the test. Such tests generally yield other important information in connection with the drilling and formations, especially in regard to water.

The B. P. Smith Land & Cattle Co. ranch, on which the test is located, covers 24,500 acres, more or less, the company having some adjacent acreage under lease also. The terrain is rolling, and if viewed from an airplane a large surface structure would no doubt unfold itself as the ship passed over from southeast to northwest, a large folding progressing through this area, with the Childress dolomite outcropping on the surface, on which the surface geology was detailed.

### Previous Tests

Fifteen years ago the first test was sunk in the county in quest of oil. The nearest test to that now being drilled by the Humble was Continental Oil Co.'s No. 1 B. P. Smith Land & Cattle Co., in Section 14, one-half mile south. It was abandoned at 3,580 feet. Another test, 1½ miles to the southeast, was drilled by Gibson Oil Co. on the same lands, in the John Gregg Survey. It was given up as a dry hole at 2,700 feet. Sloane and others drilled a 5,000-foot test on the Smith lands in the F. P. Knott Survey, Section 49, 10 miles to the southwest of the present test. The other deep test drilled in the county was put down by Texas Co. on the C. L. Smith ranch, in Section 774, Block H, W.&N.W. Survey, southwest of the town of Childress. It went to 4,571 feet.

There have been 16 tests drilled below 1,000 feet in the county, with but few going deep enough even to give geological control on the higher formations. Whether the Humble test makes a producer, it will give valuable geological information many miles in each direction.

The newly devised rig and method of arranging the machinery on this test has doubtlessly proved itself the type to use in drilling future wildcats, especially in areas where water is scarce, and tests are remotely situated. Practically every drilling hazard has been considered and provided for in equipping this test, and there is little chance for any emergency presenting itself, regardless of the depth to which the test may drill. It will be closely watched for results, particularly as it reaches the greater depths. Other company engineers and production men have already visited the test to look over the outlay and arrangement of the equipment and all con-

sider it well engineered and especially well adapted to deep drilling. Twenty-five men are used in connection with drilling the test, including four drillers: Claude Anders, W. T. Minor, C. W. Hubert and P. O. Compton. Jack Harris is tool pusher assigned especially to this test.

## Recognize Necessity for Securing Data for Wells

(Continued from Page 14)

or a properly tested spring gauge of correct pressure range to fit the conditions, can also be utilized to define pressure zones and compute the weighted average pressure for the field. From these average reservoir pressures, as of successive dates, the true pressure decline can be calculated; the latter may be used in conjunction with the metered volume of gas produced during the pressure drop, to determine the remaining reserves. Pressure data from individual wells can also be used to determine drainage interference and thus aid in the proper spacing of the wells and in outlining economical drilling programs.

A similar method is used for the determination of the open-flow capacity, or potential, of oil wells. The information required is (a) shut-in bottom hole or reservoir pressure, (b) a series of measured production rates taken with several different bottom hole flowing pressures. The logarithmic plot of such data is similar to that for gas wells, except that in the latter case the differences in the pressures-squared are used. Extrapolation of the lines to zero pressure differential affords a theoretical value for the well potential or open-flow capacity. On account of the weight of the fluid in the hole, the absolute potential or open flow cannot be actually measured, but the extrapolated or theoretical results afford a sound basis for the comparison of the well capacities, without the usual waste and hazards which accompany the ordinary capacity tests.

### Bottom Hole Data

The use of bottom hole devices which record temperature, pressure and inclination has increased rapidly during the past five years, and has contributed extensively to a knowledge of reservoir conditions. Bottom hole samples can now be secured at the identical pressures and temperatures of the reservoir. The results to be obtained through the investigation of such samples will be of far-reaching importance.

### Properties of Reservoir Fluids

Many phases of production engineering such as operating methods, rates of withdrawal, and ultimate recovery are closely linked with changes which take place in the characteristics of the reservoir fluids after production has been initiated. Since for the most part these changes appear to be functions of the variables, temperature, pressure and solubility, the ideal time to acquire fundamental data as to the effect of these variables upon the reservoir contents, would be immediately after the reservoir has been penetrated. Hence the initial well should be shut in, and a bottom hole sample of the reservoir fluids obtained which can serve as the standard with which all future samples can be compared. These samples should then be carefully studied for the effects of reduced pressures and temperatures on the solubilities of the gases, and also for the accompanying modifications in the physical properties of the fluids. As the field is developed key wells should be selected from which similar samples can be acquired, and the entire procedure of sampling and testing should be repeated periodically in order to ascertain the fundamental changes which have taken place with the reservoir.

While it is not yet possible to evaluate the combined effects upon the reservoir and its contents engendered by the above variables, this is largely due to insufficient data. Certain it is that changes in the composition and properties of the gas and oil take place as the pressures are reduced, and if the basic data for each reservoir can be secured, then supplemented periodically by similar data, it will in time be possible to apply the results to operating problems. In the long run the value of the data will far outweigh its cost of acquisition.

### Core Samples

In this connection it must be pointed out that a uniform porosity or permeability never exists, either vertically or horizontally, for any great distance in any reservoir strata. The connected permeable zones contain the only "effective porosity" in any formation. The permeable, "effective porosity" zones, plus open joints, bedding plains, channels, fractures, cavities, etc. (which cannot be evaluated from cores recovered) constitute the "pay" portion of the formation. Usually there is considerable difference between the "pay" and the sand thickness recorded in well logs as having been penetrated by the well. Consequently it is imperative to examine numerous complete cores taken from scattered wells throughout the field. This should be supplemented with or substituted by accurate measurements of the increase or decrease in the volume and pressure of gas wells and the increase or decrease of the gas-oil ratio for oil wells while "drilling in," so as to determine within reasonable limits the thickness of the pay portion of the producing formation. The accuracy of the porosity-area method of estimating oil and gas reserves is dependent in a large measure on the accuracy with which the thickness of pay zone is determined.

The term porosity should be confined to the percentage of voids in the rock. Effective porosity should be limited to the voids, which not only constitute oil, gas and water reservoirs but which are so continuously connected and of sufficient size, that their confined fluids can be recovered, even at the minimum differential pressure at which the reservoir will be operated during the economic life of the field. In spite of a high per cent of voids the rock can be practically impervious, due to the lack of effective porosity.

Permeability must be distinguished from porosity as so often loosely used. It is the "volume of a fluid of unit viscosity passing through a unit cross-section of the material under a unit pressure gradient in unit time." (Wyckoff, Botset, Muskat and Reed, A.A.P.G. Bull. 18, February, 1934, p. 163). For the same porous medium, fluid and time unit, the permeability factor is not constant if there is a change in temperature, or in the pressure gradient.

It is highly desirable that an instrument be devised which will not only cut the core, but will bring it to the surface without the loss of any of its contents. Saturation tests performed on cores taken by usual methods rarely reflect the true character of the sand in place, and until such an instrument is available, saturation tests must be regarded as approximations.

### Summary

The intimate association of oil and gas in reservoirs, and their similar behavior under many conditions, together with the marked changes which result from their mutual solution show that the problems which relate to oil and to gas can scarcely be dissociated from each other. Far more ample well and laboratory data are needed in order to provide a broader engineering basis for the oil and gas industry; when such information becomes available, its interpretation and application can well be left to the skill of the engineer.

### T. M. AGNEW DIES

Travis Mateer Agnew, 74, oldest surviving torpedo man of the Pennsylvania fields, died suddenly at his home in Franklin, Pa. He entered the oil industry at the early age of 18 and for 30 years specialized in shooting wells. He manufactured his own torpedoes at his factory at Brandon's Ferry.

## Commerce Commission Orders Investigation

(Continued from Page 9)

reau of Mines for a systematic development of the facts. The object is to learn exactly what elements of the industry desire federal control of production and their reasons. Mr. Dies believes that if he can succeed in having the industry go on record either for or against the bill, propaganda, such as was recently used to defeat the Thomas-Disney bill, will be ineffectual.

### Hearing on Quotas

At a hearing on the question of putting into the Oil Code authority to regulate the movement of crude in commerce by establishing quotas which could be moved, a number of telegrams urging this action were put into the record. They came mainly from independent associations of dealers and producers. Summarizing them, they said that the amendment was necessary to preserve the industry and to maintain the stability effective so far under the administrator's direction in enforcing code provisions for balancing crude supply with demand. The principle of setting up quotas of crude oil to move in commerce was one of the fundamentals of the Thomas-Disney bill.

Telegrams were sent by the following associations, in addition to numerous individuals:

The American Petroleum Institute, New York City.

The North Texas Oil & Gas Association by C. P. McGaha of Wichita Falls, Tex., president.

The Independent Petroleum Association of America, Ardmore, Okla., by Wirt Franklin, president.

The Pennsylvania Grade Crude Oil Association, Oil City, Pa.

The Central Pennsylvania Oil Producers Association, Oil City.

The Western Pennsylvania Oil Producers Association, Butler, Pa.

The Bradford District Pennsylvania Oil Producers Association, Bradford, Pa.

The Middle District Pennsylvania Oil Producers Association, Warren, Pa.

The New York State Oil Producers Association, Oliver, N. Y.

The West Virginia Oil and Natural Gas Association, Fairmont, W. Va.

The Northwest Petroleum Association, Minneapolis, Minn.

The Independent Filling Station Association of St. Louis, by Henry Rieansnider, secretary.

The South Dakota Independent Oil Manufacturers Association, Madison, S. D., by F. H. Buehler, secretary.

The Missouri Oil Men's Association, Kansas City, Mo., by George S. Allee, president.

The Iowa Petroleum Association, Des Moines, by M. L. Long, secretary.

The Kansas Oil Men's Association, Wichita, Kans., by J. A. Motter, secretary.

Independent Gasoline Station Owners of Michigan, Detroit.

The Wisconsin Petroleum Association, Milwaukee, Wis.

The Oklahoma Petroleum Marketers Association, Oklahoma City, by J. R. Atchison, manager.

The Illinois Petroleum Marketers Association, Springfield, Ill.

Retail Gasoline Dealers and Service Association of Wisconsin, Milwaukee.

Amos L. Beaty, chairman of the Planning and Coordination Committee in the absence of Axtel J. Byles, president of the American Petroleum Institute, who was unable to attend, represented the Institute as well as the committee in speaking for the proposed amendment. He stated that the application for this amendment was submitted last November. Modifications and suggestions of the Planning and Coordination Committee were submitted to the administrator in February. He also stated that the principle of the amendment is to control production of crude oil by quotas when there is an oversupply or overproduction of crude in order to prevent dumping. He added that the majority of the industry is supporting this proposal. The American Petroleum Institute, he said, represents 65 per cent of the producers in the country and 90 per cent of the refining and cracking capacity of the industry. This proposal was submitted to the annual meeting of the Institute and was approved unanimously by the board of directors as well as by about 1,700 members present. He was requested by Nathan Margold, chairman of the Petroleum Administrative Board, to file a brief on the constitutionality of this amendment. No opponents to the amendment appeared at the hearing.

### Proposed Amendment

The following is the text of the proposal submitted by the Institute, but the amendment which will be approved by the administrator is expected to include most of the substantive provisions of the Thomas bill:

"Upon a finding by the President or the federal agency that interstate commerce in crude petroleum or the products thereof is injuriously affected by an over-supply of crude petroleum in the United States, and that commerce in petroleum and the products thereof is such that any remedy, to be effective in respect to interstate commerce, must incidentally apply in like manner to intrastate and foreign commerce, the President or the federal agency may establish quotas in commerce for crude petroleum from all or any of the various pools and properties and storage sources in the United States and while such quotas are in effect no person shall place in commerce or receive in commerce (foreign, interstate or intrastate) by sale, exchange or consignment, any crude petroleum in excess of quota, and a violation of this provision shall be deemed unfair competition, an unfair trade practice, and a violation of this code."

### Wage Differentials

Interpretations of the Wage Differential Order of May 21 have been issued by H. H. Anderson, chairman of the labor sub-committee of the Planning and Coordination Committee. These interpretations were issued by the sub-committee upon the refusal of the Petroleum Labor Policy Board to issue the broad interpretations necessary, the feeling of the board being that it would only interpret the order as cases arose necessitating explanation of the various points. However, the members of the Labor Policy Board agreed that the interpretations reasonably define the intention of the order.

Under these interpretations, when a plant establishes an adjusted wage for its employes, they may, in conjunction with employers of at least two-thirds of the employes of any classification in the immediate operating area, establish a weighted average wage for that area. Plants whose average rate would be less than this weighted average for the area may pay either the plant rate or the rate established for the area, unless their average hourly rate in effect on May 21, 1934, was greater than either the May, 1929, plant rate or the rate established for the area. This, it is expected, will lay the groundwork for a general classification of all employes in the industry.

Provision is also made that employes put to work so the company could comply with the President's Re-employment Agreement are exempt from the provisions of the order, as are employes employed after August 19, 1933. The reason for these exemptions is that the purpose of the order is to adjust hourly wage rates to offset, in part, the reductions in earnings caused by the shortening of hours under the operation of the code.

### DEATH OF D. D. MALLORY

FRANKLIN, Pa., June 30.—Dennie D. Mallory, 75, for 51 years comptroller of the Galena Signal Oil Corp., died Thursday. He had been in ill health several months. Mr. Mallory was widely known in oil and refinery circles in the East. He leaves a widow, and a daughter, Mrs. Frank Lyon of Pittsburgh.

## Late Fields

### OKLAHOMA

Continental Oil Co.'s No. 1 Bennett, SE NW Section 19-20-1w, Noble County, made two short-time flows of about 15 bbls. each on Monday of this week. This is the first time the well has staged a flow, and encouraged the company to run tools and core ahead.

Mid-Kansas Oil & Gas Co.'s No. 1 Dahl, C SE SE SE Section 31-14-3w, an offset to the Edmond discovery well of the same company, topped Simpson sand around 6,300 feet, where 7-inch pipe was set. A core in green shale and dolomite at 6,360-66 feet showed oil, and another showing of oil was found at 6,375-87 feet in sandy dolomite. Wilcox sand was found at 6,385 feet. The well ran 274 feet higher structurally than the discovery well.

The Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 James, NE NE SW Section 35-13-5, Wilzetta Pool, Lincoln County, and offsetting the discovery well of the same companies, was plugged back from 4,309 feet to 4,265 feet, and acidized in Hunton lime. It flowed 914 bbls. of oil and 325 bbls. of water in 10 hours on Sunday and 375 bbls. of oil and 175 bbls. of water in four hours on Monday morning.

The Carter Oil Co. and Norbla Oil Co.'s No. 7 Presbury, SE NE Section 10-25-6, South Burbank Field, Osage County, flowed 973 bbls. in 12 hours from Burbank sand at 2,714-89 feet.

The Texas Co. has what appears to be an important well in SE NW Section 12-23-7, Osage County. It found the top of the Hominy sand at 2,867 feet, and commenced spraying oil immediately. It was shut in.

## Ickes Differential Order Meeting Serious Protests

(Continued from Page 8)

sued by yourself of May 21 and unanimously adopted the following resolution: 'Resolved, that the board of directors of the Mid-Continent Oil and Gas association protests the wage differential order of the petroleum administrator issued on May 21, 1934, for the fundamental and primary reasons as follows. First, that the retroactive features of the order are invalid and unconstitutional. Second, that the wage differential order was not made in compliance with the authority vested in the petroleum administrator under the code of fair competition for the petroleum industry. Third, that the wage increases and differentials prescribed by said order are not justified by present economic conditions and the general situation of the petroleum industry itself. Resolved further that the board of directors of the Mid-Continent Oil and Gas association respectfully requests that the wage differential order of the petroleum administrator be revoked or suspended and that the board requests a formal hearing or conference to be held on this matter by the petroleum administrator himself at the earliest possible date. Formally signed copies of this resolution are being transmitted by air mail today."

"CLAREL B. MAPES, Secretary, Mid-Continent Oil and Gas Association."

It was brought out in the meeting that the order of Secretary Ickes was issued in opposition to the wishes of the Planning and Coordination Committee and the American Petroleum Institute. Other associations were expected to voice their opposition to the order, including the Independent Petroleum Association of America, National Petroleum Association, Rocky Mountain Oil & Gas Association, Western Petroleum Refiners Association, Natural Gas Association of America and the California Oil & Gas Association.

### J. A. MOFFETT HEADS HOUSING

James A. Moffett, vice president of the Standard Oil Co. of California, has been named administrator of the new housing act by President Roosevelt.

## Royalty Interests Under the New Securities Law

WASHINGTON, D. C., July 2.—The Federal Trade Commission has issued an interpretation of the Securities Act as applied to fractional, undivided oil and gas royalty interests, and adopted a new form G-1 to be used in the registration of such interests.

It also made public regulations of exemption when the aggregate amount of an issue, of which the fractional interest offered is a part, calculated on the basis of the price at which such particular fractional interest was first offered to the public by the offerer claiming exemption, shall not exceed $100,000.

The interpretation discusses the amendments to the Securities Act of 1933, included in the Securities Exchange Act of 1934, bearing on such securities.

"The amendment to the definition of the term 'security' makes clear that the provisions of the Securities Act apply to the sale of certain oil and gas interests," the commission ruled. "The ordinary royalty interests which entitles the holder to share in the oil or gas produced from a particular tract of land clearly comes within this definition. Whether such interests are transferred by deed or contract and whether under the law of the particular state in which the tract is located such interests are regarded as real estate or as personal property make no difference in the application of the act.

"The word 'rights' is broad enough to make the definition applicable to interests which are regarded as giving ownership of the oil or gas in place, as well as to the interests which merely afford the owner the right to produce oil or gas. The act applies, however, only to 'fractional' interests. The transfer of the whole royalty interest in any tract of land, though under the terms of the lease the holder may be entitled only to a portion of the production, is not considered the transfer of a security under the act."

The regulations providing exemptions are in two parts. One part, which is intended to be permanent and applies to both producing and nonproducing royalty interests, is conditioned, so far as it applies to the activities of brokers and dealers, on the furnishing of an offering sheet, which shall contain items of information specified in the regulations. To a large extent these items are the same as must be furnished in a registration statement filed on Form G-1.

This form requires disclosures of information concerning the property to which the royalty interest applies and its productivity, as well as information concerning the legal instruments which will govern the rights of the royalty holder. These requirements have been based in the main upon the type of information included in the offering sheets of the better class of royalty dealers.

The other exemption regulations applying to all fractional undivided interests in oil, gas or other mineral rights coming within the exemption limitation of $100,000 will apply to such interests if sold on or before August 15, 1934.

This exemption, the commission explained, was to provide a period in which dealers may become acquainted with the requirements of the permanent exemption regulation as well as to permit the working out of special regulations for oil and gas working interests as distinguished from royalties.

## Eastern Market Looks to West for Indications

(Continued from Page 25)

by sections and cities. One authority claims that lack of information along these lines has accounted for most of the price wars that have taken place in this territory over the past two years.

### Prices

With middle octane motor available at the Gulf Coast around 4¾ cents per gallon in cargo lots, the New York price of 6¼ to 6½ cents does not appear to be in a secure position. However, so far as known, low-priced shipments have not made their appearance in sufficient volume to be a disturbing factor. Some of the companies with large retail facilities state that the price situation in the service station end is better now than any time since early last fall. In Greater New York, with only 1-cent differential between the regular and third grade, the retail volume of the latter has decreased and some companies are no longer offering the third grade.

The lowest reported price on the third grade gasoline in tank car lots is 5¾ cents with the usual quotation, 6 to 6¼ cents. Should Gulf Coast material be dumped on this market the first weakness here probably will be in this third grade price. The low price on the 65 octane plus material continues at 6½ cents in the New York harbor area.

Spot trading in kerosene, furnace oils and gas oils is dull, but contract business appears to have increased in volume. One company reported that its contracts with consumers on furnace oils were 200 per cent over a year ago. This is an unusual situation for most companies' contracts in this product have been running behind last year.

The harbor quotation for Bunker C fuel is $1.30 with most of the activity in this product also in the contract end. Prices on the furnace oils range from 4½ to 5½ cents, kerosene 5¼ to 5½ cents and gas oil and distillate 4½ to 5 cents.

Although certain grades are scarce, the lubricating oil market on the whole is having difficulty in maintaining prices due to reduced volume of business. The same situation applies to wax with no important price changes in any of these products reported over the past week.

## The Oil Man's Calendar

### July

9-10—Rapid City, S. Dak., South Dakota Independent Oil Men's Association.

### August

24-27—Titusville, Pa., Drake Well Memorial Celebration.

### September

9—Wernersville, Pa., American Trade Association executives.

10-14—Cleveland, Ohio, American Chemical Society.

11-12—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel (dates tentative).

12-14—Atlantic City, N. J., North American Gasoline Tax Conference, Claridge Hotel.

19-21—Atlantic City, N. J., National Petroleum Association.

26-27—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

### October

1-5—Cleveland, Ohio, National Safety Council, Cleveland, Statler, Carter and Hollenden Hotels.

9—Michigan Independent Petroleum Distributors Association, place to be named later.

12-13—American Institute of Mining Engineers, Petroleum Division, fall meeting, Tulsa, Mayo Hotel.

16-18—Big Four State Jobbers Association Convention, Kansas City, Mo.

29—American Gas Association Convention and Exhibition, Atlantic City, N. J.

### November

5-9—Cleveland, Ohio, Automotive Service Industries Show, Cleveland Public Auditorium.

Los Angeles, Calif., American Association of Petroleum Geologists, Pacific section.

12-15—Dallas, Tex., annual meeting, A.P.I.

### December

3-8—New York, National Exposition of Power and Mechanical Engineering, Grand Central Palace.

### January

7—New York, Society of Automotive Engineers, annual dinner.

### NEW TEXAS PRORATION HEARING

AUSTIN, Tex., July 2.—The Texas Railroad Commission has called a statewide oil proration hearing for July 23. Effects of a 10 per cent reduction in the allowable production of the State's four principal flush pools, effective yesterday, likely will be reviewed at the hearing.

Commissioner E. O. Thompson said the commission would ask for nominations for the purchase of crude oil, to ascertain the market demand during August.

### MAGNETIC STORM

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report a severe magnetic storm beginning at 4 a. m. (C.S.T.) on the third and continuing at time of going to press. Its telegram reads:

"Storm began third. Ten. Severe."

### H. F. SINCLAIR ABROAD

Harry F. Sinclair, chairman of the board of the Consolidated Oil Corp., and Sheldon Clark, vice president of the Sinclair Refining Co., sailed from New York City Saturday on a trip to Europe.

### ROCKY MOUNTAIN RUNS

Estimated daily average production for the week ending June 30 follows:

| | Bbls. |
|---|---|
| **WYOMING** | |
| Salt Creek | 18,020 |
| Big Muddy | 1,820 |
| Badger Basin | 40 |
| Byron | 0 |
| Black Mountain | 600 |
| Dallas Derby | 600 |
| Dutton Creek | 40 |
| Elk Basin | 570 |
| Ferris | 40 |
| Frannie | 2,350 |
| Garland | 970 |
| Grass Creek | 1,290 |
| Greybull | 10 |
| Hamilton Dome | 940 |
| Hudson | 300 |
| LaBarge | 1,640 |
| Lance Creek | 350 |
| Lost Soldier | 1,340 |
| Mule Creek | 0 |
| Midway | 70 |
| Notches | shut in |
| Oregon Basin | 2,590 |
| Osage | 970 |
| Pilot Butte | 10 |
| Rex | shut in |
| Rock River | 1,540 |
| South Casper | 510 |
| Poison Spider | 330 |
| Teapot | 30 |
| Total Wyoming | 36,980 |
| **MONTANA** | |
| Buckley-Border | 260 |
| Cat Creek | 600 |
| Cut Bank | 2,500 |
| Dry Creek | shut in |
| Kevin-Sunburst | 4,360 |
| Lake Basin | 40 |
| Pondera | 890 |
| Total Montana | 8,750 |
| **COLORADO** | |
| Florence | 210 |
| Fort Collins and Wellington | 440 |
| Iles Dome | 1,450 |
| Moffat | 450 |
| Orchard | 90 |
| Rangely | 90 |
| Tow Creek | 220 |
| Total Colorado | 2,980 |
| **NEW MEXICO** | |
| Artesia | 640 |
| Cooper area | 80 |
| Empire area | 0 |
| Eunice area | 2,110 |
| Getty Pool | 0 |
| Hobbs | 36,750 |
| Hogback | 310 |
| Hospah | shut in |
| Jal | 2,960 |
| Lea area | 2,600 |
| Jackson | 2,450 |
| Maljamar | 150 |
| Rattlesnake | 690 |
| Table Mesa | 90 |
| Total New Mexico | 48,130 |
| Total Rocky Mountain | 96,840 |

# Are You Trying To Do 1934 Oil Field Jobs With 1924 Equipment?

You wouldn't drive a 1924 automobile. It would be too far behind modern standards in performance.

You couldn't meet today's demands on your time with an obsolete motor car. You can't meet today's demands in the oil fields with obsolete drilling and pumping equipment.

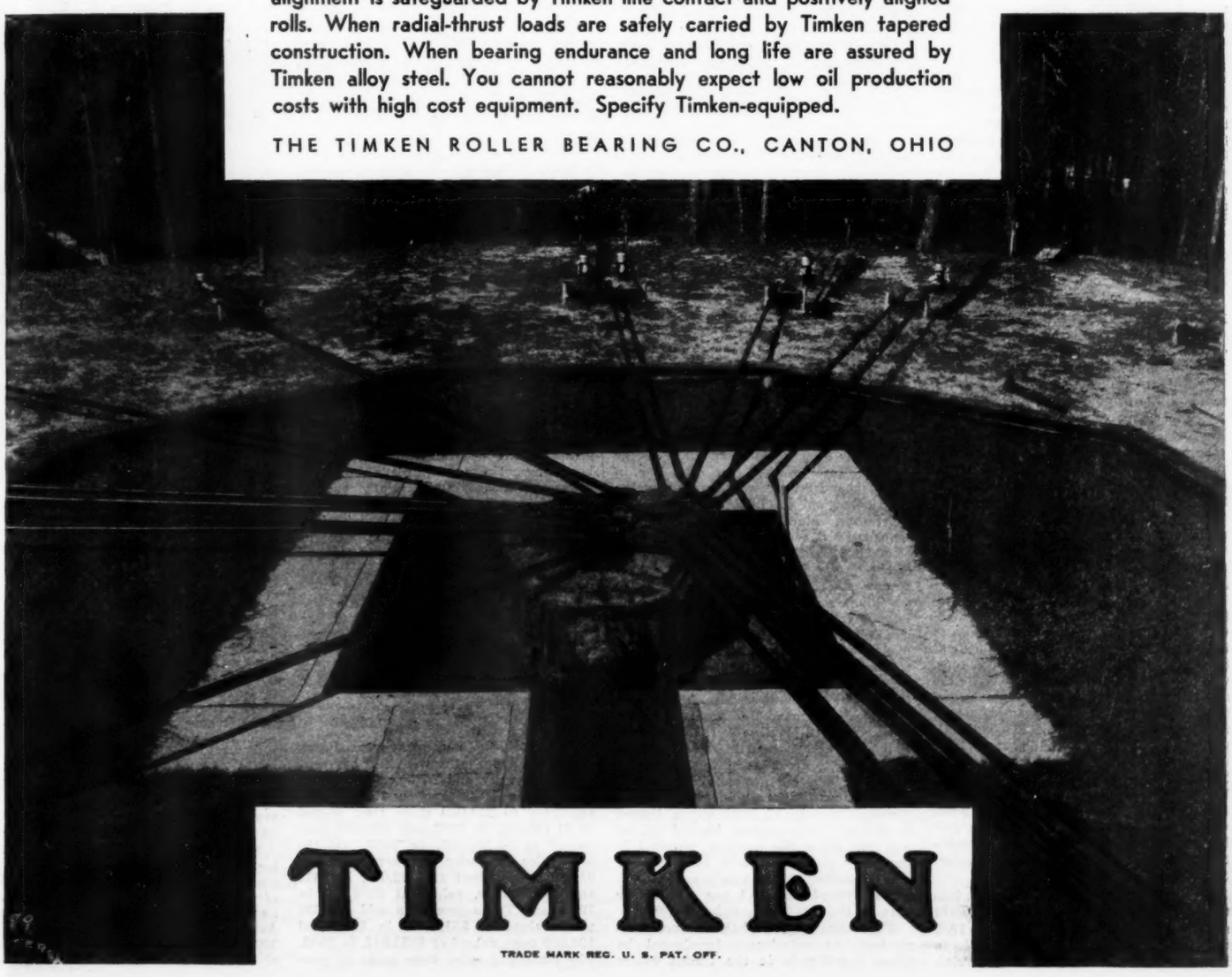
When is oil field machinery obsolete? When it is handicapped by friction. When speeds are low and operating costs high. When wear threatens dependability. When moving parts cannot be kept in proper alignment. When radial, thrust and combined loads cannot be dependably carried. When maintenance expense is excessive.

When is oil field machinery modern? When shafts and gears turn frictionlessly and wearlessly on Timken Tapered Roller Bearings. When correct alignment is safeguarded by Timken line contact and positively aligned rolls. When radial-thrust loads are safely carried by Timken tapered construction. When bearing endurance and long life are assured by Timken alloy steel. You cannot reasonably expect low oil production costs with high cost equipment. Specify Timken-equipped.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

Lufkin H. B. No. 150 Herringbone Central Pumping Power equipped with Timken Bearings on the center trunnion, bevel pinion shaft and crank pin. Drive shaft mounted on Dodge-Timken units. Capacity, 150 H. P. at 20 strokes per minute Maximum number of wells handled, 18.

Tapered Roller TIMKEN BEARING EQUIPPED



TIMKEN

TRADE MARK REG. U. S. PAT. OFF.

# Refiners Produce Two and One Half Million Tons of Asphalt Annually for Domestic Market

Domestic demand for asphalt changed little in quantity, from 2,295,326 short tons in 1932 to 2,296,046 tons in 1933. Production of asphalt (exclusive of road oil) at petroleum refineries in the United States amounted to 2,474,919 tons in 1932 and 2,456,051 tons in 1933, according to figures compiled by the Bureau of Mines, Department of the Interior. Stocks of asphalt held by refineries were reduced from 298,684 tons on December 31, 1932, to 276,363 tons on December 31, 1933. Imports, chiefly of lake asphalt and grahamite, amounted to 20,474 short tons in 1932 and 21,706 tons in 1933; they constitute less than 1 per cent of the asphalt apparently consumed in the United States in those years. Exports of pertoleum asphalt declined from 206,006 short tons in 1932 to 204,032 tons in 1933.

Of the 2,456,051 short tons of asphalt manufactured at petroleum refineries in 1933, 1,218,665 tons were made from foreign crude oil, imported chiefly from Venezuela, Colombia, and Mexico, and 1,237,386 tons from crude petroleum produced in the United States. The 1933 total output included 136,572 short tons of other petroleum products blended with the asphalt to produce commercial varieties of the required hardness and consistency.

### Value Increased

Refinery sales of petroleum asphalt changed little in quantity, from 2,408,818 short tons in 1932 to 2,424,800 tons in 1933. In value, however, they increased 26.5 per cent (from $18,605,117 in 1932 to $23,542,544 in 1933). The shift in the uses of asphalt which has been manifest since 1930 continued in 1933. Cut-back asphalts, used in the construction of low-cost bituminous types of road surface, gained in relative importance, from 8.1 per cent of all asphalts sold in 1930 to 21 per cent of the total sales in 1933. At the same time, paving asphalt, used in the construction of high-type streets and highways, declined from 42.4 per cent of all asphalt sales in 1930 to 32.9 per cent in 1933. Similarly, sales of roofing asphalt, which constituted 26.2 per cent of the saphalt sold in 1930, decreased in importance to 20.4 per cent of the sales in 1933.

In response to a general decrease in the laying of hard-surface pavements, sales of paving asphalt by petroleum refineries declined from 856,638 short tons, valued at $6,347,128, in 1932 to 798,607 tons, valued at $7,474,851, in 1933. Sales of paving flux increased slightly, from 107,468 tons, valued at $723,585, in 1932 to 110,917 tons, valued at $875,109, in 1933. Increased use in the construction of low-cost bituminous highways caused sales of cut-back asphalts to increase from 440,838 tons, valued at $3,643,731, in 1932 to 508,553 tons, valued at $5,764,998, in 1933. At the same time, refinery sales of asphalts and fluxes emulsified with water decreased from 44,354 tons (10,436,288 gallons), valued at $572,327, in 1932 to 33,303 tons (7,845,911 gallons), valued at $350,554, in 1933. In addition, 25,800,000 gallons of asphalt emulsions, valued at $1,908,488, in 1932 and 21,149,000 gallons, valued at $1,132,790, in 1933 were sold by industrial companies which emulsified asphalts or fluxes brought from petroleum refiners.

Imports of asphalt and bitumen into the United States increased from 20,474 short tons, valued at $251,402, in 1932 to 21,706 tons, valued at $278,401, in 1933. Lake asphalt imported from Trinidad amounted to 12,596 tons in 1932 and 12,047 tons in 1933. Glance pitch, or grahamite, imported from Cuba increased from 7,457 tons in 1932 to 8,286 tons in 1933.

Exports of petroleum asphalt from the United States were 1 per cent less in quantity and 9.7 per cent lower in value in 1933 than in 1932. From 206,006 short tons, valued at $3,168,138, in 1932 they declined to 204,032 tons, valued at $2,860,964, in 1933. The principal decreases were in exports to Canada, to France and Italy, to China, French Indo-China, and Japan, to the Philippine Islands and Australia. On the other hand, larger shipments of petroleum asphalt were made to the United Kingdom, to British India, British Malaya, and Ceylon, the Netherland East Indies, and the Union of South Africa.

Domestic demand for asphalt during the first three months of 1933 averaged 16.5 per cent less than in the first quarter of 1932. From April to July, however, the indicated demand in 1933 was 11.5 per cent higher than in the corresponding months of 1932. From August to October, 1933, asphalt demand fell 8.3 per cent below the quantity required in the same months of 1932. In November and December, 1933, however, the indicated demand was 10.1 per cent higher than in the last two months of 1932.

The tonnage of asphalt (natural, by-product, or petroleum) terminated by Class 1 railroads in the United States totaled 2,407,165 short tons, a decrease of 8 per cent from the 2,617,253 tons terminated in 1932, according to statistics received from the Interstate Commerce Commission. The greatest decreases were in terminations of asphalt by transcontinental railroads operating between Chicago and Duluth on the East and the Pacific Coast on the West; by railroads serving the corn and wheat states west of the Mississippi River; by railroads of the Great Lakes region and of New England. On the other hand, more asphalt was terminated in 1933 than in 1932 by railroads operating between New York, Philadelphia, and Baltimore on the East and Chicago, Peoria, and St. Louis on the West, and by railroads of Missouri, Arkansas, Louisiana, western and southern Texas, and eastern Oklahoma.

### Bituminous Rock

Sales of bituminous rock by producers in the United States were 9.2 per cent less in quantity and 20.5 per cent lower in value in 1933 than in 1932. They amounted to 314,039 short tons, valued at $1,415,427, in 1932 and 285,070 tons, valued at $1,125,164, in 1933. Of the total sales Kentucky producers furnished 91,289 tons, valued at $792,643, in 1932 and 44,369 tons, valued at $356,139, in 1933, and Texas producers sold 132,636 tons, valued at $312,663, in 1932 and 126,069 tons, valued at $353,847, in 1933. The remaining sales were made by producers in Alabama, California, Kansas, New Mexico, and Oklahoma.

Producers in northeastern Utah increased their sales of gilsonite from 25,955 short tons, valued at $525,266, in 1932 to 28,029 tons, valued at $577,710 in 1933.

Sales of wurtzilite from Utah increased from 25 short tons, valued at $2,250, in 1932 to 36 tons, valued at $2,430, in 1933.

Exports of asphalt and bitumen, unmanufactured, from the United States increased from 12,365 short tons, valued at $448,949, in 1932 to 13,806 tons, valued at $553,892, in 1933. Eighty per cent of these exports in 1932 and 80.5 per cent in 1933 were shipped to Europe. Canada received 11.3 per cent of the total in 1932 and 8.8 per cent in 1933.

**PRODUCTION, REFINERY MOVEMENT, AND SALES OF PETROLEUM ASPHALT IN THE UNITED STATES, 1932, BY DISTRICTS**

| District— | Production (short tons) | Receipts from other sources (short tons) | Stocks: Beginning of year (short tons) | Stocks: End of year (short tons) | Consumption at refineries, transfers, losses (short tons) | Sales (short tons) | Sales value |
|---|---|---|---|---|---|---|---|
| East Coast | 1,139,237 | 18,551 | 108,439 | 96,254 | 4,283 | 1,165,690 | $12,183,401 |
| Appalachian | 91,985 | 71 | 9,360 | 9,028 | 18 | 92,370 | 1,085,355 |
| Ind., Ill., Ky. | 444,032 | 257 | 66,277 | 57,447 | 5,673 | 447,446 | 4,047,953 |
| Okla., Kans., Mo. | 68,023 | 154 | 4,706 | 7,170 | 29,564 | 36,149 | 351,832 |
| Texas Gulf Coast | 156,149 | ..... | 5,963 | 7,197 | 37,419 | 117,496 | 980,468 |
| Texas Inland | 33,651 | 1,482 | ..... | 2,644 | ..... | 32,489 | 261,321 |
| Total Texas | 189,800 | 1,482 | 5,963 | 9,841 | 37,419 | 149,985 | 1,241,789 |
| La. Gulf Coast | 108,835 | 203 | 38,392 | 28,963 | 2,278 | 116,189 | 1,120,125 |
| N. La.-Ark. | 86,387 | ..... | 22,819 | 19,169 | ..... | 90,037 | 587,897 |
| Total La.-Ark. | 195,222 | 203 | 61,211 | 48,132 | 2,278 | 206,226 | 1,708,022 |
| Rocky Mountain | 3,928 | 1,686 | 3,231 | 2,525 | 2,225 | 4,095 | 44,767 |
| California | 323,824 | 31,551 | 39,497 | 45,966 | 26,067 | 322,839 | 2,879,425 |
| Grand total, 1933 | 2,456,051 | 53,955 | 298,684 | 276,363 | 107,527 | 2,424,800 | 23,542,544 |
| Total, 1932 | 2,474,919 | 77,126 | 304,623 | 298,684 | 149,166 | 2,408,818 | 18,605,117 |

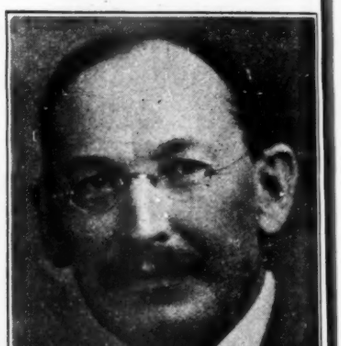
**ASPHALT AND ASPHALTIC MATERIAL (EXCLUSIVE OF ROAD OIL) SOLD AT PETROLEUM REFINERIES IN THE UNITED STATES IN 1933, BY VARIETIES**

(Value f.o.b. refinery)

| Solid and semi-solid products of less than 200 penetration— | From Domestic petroleum: Short tons | From Domestic petroleum: Value | From Foreign petroleum: Short tons | From Foreign petroleum: Value | Total: Short tons | Total: Value |
|---|---|---|---|---|---|---|
| Asphalt for: | | | | | | |
| Paving | 355,276 | $3,082,557 | 443,331 | $4,392,294 | 798,607 | $7,474,851 |
| Roofing | 292,365 | 2,713,889 | 203,093 | 2,082,947 | 495,458 | 4,796,836 |
| Waterproofing | 55,719 | 503,684 | 48,163 | 476,765 | 103,882 | 980,449 |
| Blending with rubber | 3,067 | 35,503 | 18,544 | 207,592 | 21,611 | 243,095 |
| Briquetting | 27,003 | 302,817 | 4,087 | 42,738 | 31,090 | 345,555 |
| Mastic and mastic cake | 212 | 1,701 | 679 | 7,060 | 891 | 8,761 |
| Pipe coatings | 4,953 | 61,423 | 1,967 | 19,650 | 6,920 | 81,073 |
| Molding compounds | 2,899 | 30,496 | 6,139 | 64,827 | 9,038 | 95,323 |
| Miscellaneous uses | 30,746 | 298,137 | 38,633 | 380,605 | 69,379 | 678,742 |
| Total | 772,240 | 7,030,207 | 764,636 | 7,674,478 | 1,536,876 | 14,704,685 |
| Semisolid and liquid products of more than 200 penetration— | | | | | | |
| Flux for: | | | | | | |
| Paving | 67,417 | 459,286 | 43,500 | 415,823 | 110,917 | 875,109 |
| Roofing | 124,292 | 647,924 | 82,340 | 898,890 | 206,632 | 1,546,814 |
| Waterproofing | 2,481 | 16,388 | 5,495 | 60,382 | 7,976 | 76,770 |
| Cut-back asphalts | 194,945 | 2,166,463 | 313,608 | 3,598,535 | 508,553 | 5,764,998 |
| Emulsified asphalts and fluxes | 19,439 | 220,911 | 13,864 | 129,643 | 33,303 | 350,554 |
| Paints, enamels, japans, lacquers | 7,275 | 92,179 | 5,915 | 65,407 | 13,190 | 157,586 |
| Other liquid produts | 4,618 | 41,922 | 2,735 | 24,106 | 7,353 | 66,028 |
| Total | 420,467 | 3,645,073 | 467,457 | 5,192,786 | 887,924 | 8,837,859 |
| Grand total, 1933 | 1,192,707 | 10,675,280 | 1,232,093 | 12,867,264 | 2,424,800 | 23,542,544 |
| Total, 1932 | 1,062,816 | 8,591,564 | 1,346,002 | 10,013,553 | 2,408,818 | 18,605,117 |

## Dr. David White Honored By British Technologists

Dr. David White, of the U. S. Geological Survey, to whom the Institution of Petroleum Technologists, London, England, has awarded the Redwood Medal, was born at Palmyra, N. Y., in 1862



DR. DAVID WHITE

and graduated from Cornell University in 1886. In the same year he entered the U. S. Geological Survey, serving as chief geologist from 1912-1922, and is still with that organization.

In 1913 he directed a survey of the oil shales in Colorado, Utah, and Wyoming. During the war he supervised intensive exploration of the known and prospective petroleum regions of the United States. In 1920 he was associated with Eugene Stebinger in the preparation of estimates of the world's petroleum resources. As chairman of the Division of Geology and Geography of the National Research Council, Doctor White served as director or advisor in a five-year program of fundamental researches on petroleum carried out during 1926-31.

Dr. David White is an Honorary Doctor of Science of the Universities of Cincinnati and Rochester, a past president of the Geological Survey of America, and an honorary member of the American Association of Petroleum Geologists. In 1931 he was awarded the Penrose Medal of the Society of Economic Geologists.

# Diesel Engine Is Not Likely to Replace Gasoline Motor for Use in Modern Passenger Cars

By WILLIAM H. HUBNER[1] and GEORGE B. MURPHY[2]
Universal Oil Products Co.

The automotive-type Diesel engine has been discussed at great length in the literature by leading engineers and technologists in this country and in Europe. In some cases opinions differ. It was believed desirable, therefore, to prepare a summary of this information with particular reference to:

1. The future of the automotive-type Diesel.
2. The advantages and disadvantages of the Diesel in comparison to the gasoline engine.
3. A comparison of the combustion processes of the Diesel and the gasoline engine.
4. The relative merits of the various Diesel engine designs.
5. Diesel fuels and methods of evaluation.
6. The ability of American refiners to meet increasing demands for Diesel fuel and the effect such increasing demand might have on refining operations and refining economics.

In England and on the Continent, where the cost of gasoline is relatively high, the Diesel is fast replacing the gasoline engine for commercial vehicle service. In this country, however, although a number of truck and bus manufacturers are now offering Diesel engines either as standard or optional equipment, the development of the Diesel for such purposes has not been so rapid, partly because of the relatively low cost of gasoline, and partly because of the knowledge that a more general use of Diesel fuel would soon increase its per gallon price to within a few cents of that of gasoline. In this connection J. Geschelin[3], engineering editor of Automotive Industries, remarks that:

". . . we may expect the general imposition of a fuel tax which will bring the wholesale price of gasoline and fuel oil closer together. Even then there should be a spread of at least 2 cents per gallon between the two fuels. (However), . . . even if its fuel is taxed, even if the price of fuel were to approach that of gasoline it (the Diesel) has the advantage of cutting fuel consumption from 30 to 50 per cent."

Because of this greater fuel economy and the added advantage of a smaller fire risk, many are convinced that the Diesel is the engine of the future for commercial transportation purposes, namely, air, water, rail, truck and bus. Of these, the railroads appear to offer the most promising possibilities in the United States, at least for the immediate future. The most significant recent developments of the automotive-type Diesel in this country have been in adapting it to the light, high-speed trains which bid fair to become, before long, increasingly important in the railroad field.

**TABLE 1—COMPARISON OF DIESEL AND GASOLINE ENGINES***

| | Diesel | Gasoline | |
|---|---|---|---|
| | truck and bus | Truck and bus | Automobile |
| Cost, approx. | 200% higher | .... | .... |
| Weight (lb. per b.h.p.) | 13–32 | 7–21 | 6–12 |
| Speed, r.p.m. | 1000–2500 | 1200–3400 | 2600–4200 |
| B.h.p. per cu. in. piston displacement | .10–.22 | .10–.36 | .27–.63 |
| Compression ratio (standard) | 14–17:1 | 3 5–5.5:1 | 5 0–6.7:1 |
| Compression pressure, lbs. per sq. in., app. | 400–570 | 80–120 | 110–160 |
| Maximum pressure, lbs. per sq. in., app. | 550–880 | 275–425 | 400–550 |
| Thermal efficiency, per cent app. | 35–38 | 22–28 | 24–28 |
| Performance: | | | |
| (a) Fuel consumption | 30-60% less | ..... | ..... |
| (b) Acceleration | Slightly better | ..... | ..... |
| (c) Idling | Poorer | ..... | .. . |
| (d) Exhaust smoke | More objectionable | ..... | .. .. |
| (e) Carbon monoxide | None (20-30% excess air) | Some | Some (No excess air) |

*Reference 9.

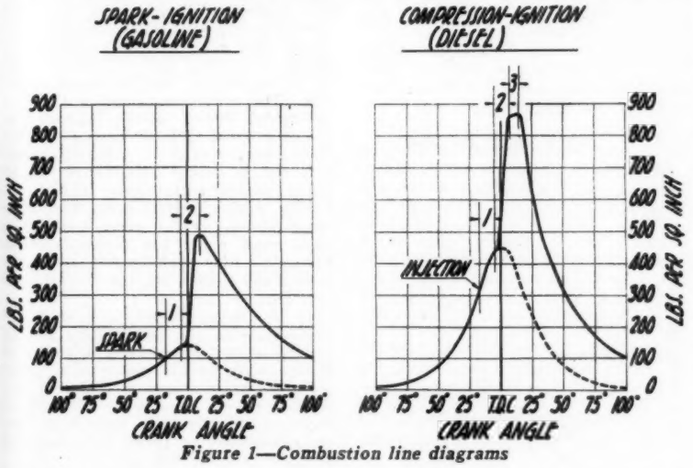



*Figure 1—Combustion line diagrams*

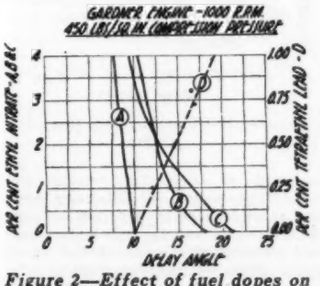



*Figure 2—Effect of fuel dopes on delay angle*

[1]Automotive engineer.
[2]Manager of the research and development laboratories.

Not As Auto Engine

We do not believe, however, that the Diesel will ever replace the gasoline engine as standard equipment for passenger automobiles. Furthermore, from all indications it will be many years before the Diesel makes noticeable inroads in the truck and bus field. Of these points, opinions of various engineers and technologists differ:

1. T. B. Rendel[4], Shell Petroleum Corp., states that "(in Europe) the high-speed Diesel engine has definitely graduated in road vehicle service, the most difficult service to which any engine can aspire. While still holding its trump card of lower fuel consumption, it is putting up a very good fight on the basis of actual performance."

2. Geschelin[3] emphasizes the fact that "so far as European experience is concerned, one can take his pick of the results. Some quarters show glowing reports; others, not so good. . . . the sole object of European designers was to get economy. Performance was not even considered. Diesel experts in this country, as well as technicians identified with European development, advise us that improvement (in performance) is possible and can be achieved. Certainly my experience in making the run on the Cummins equipped bus from New York to Los Angeles gave me a high regard for the performance of the Cummins Diesel."

3. Major W. H. Goddard[5], member of the Institution of Petroleum Technologists, believes that "very shortly a Diesel car will be a practical proposition. . . . the car when it does appear will be such an advance that, with the exception perhaps of the high-powered luxury vehicle, all petrol cars will be automatically out of date. The high thermal efficiency, the extraordinary torque range, simplicity, ease of starting, elimination of magnetos and carburetors, low maintenance costs, and freedom from danger of fire both in garages and on the road can only have one result—its general acceptance and the gradual elimination of the petrol engines."

4. On the other hand, H. R. Ricardo[6] states that "for my own part I cannot see the Diesel engine being used in passenger-carrying pleasure vehicles (because of the extremely difficult problem of fuel creep and smell), although for heavy transport vehicles and cross-country work I think it is to be tolerated. . ."

5. H. M. Crane[7], General Motors Corp., persists: "I cannot see the Diesel engine for trucks or other work of that kind any more today than I could in the past. It is being used abroad to evade gasoline taxation . . . I think the Diesel engine suffers from all sorts of inherent difficulties so far as motor car use is concerned, even in commercial vehicles."

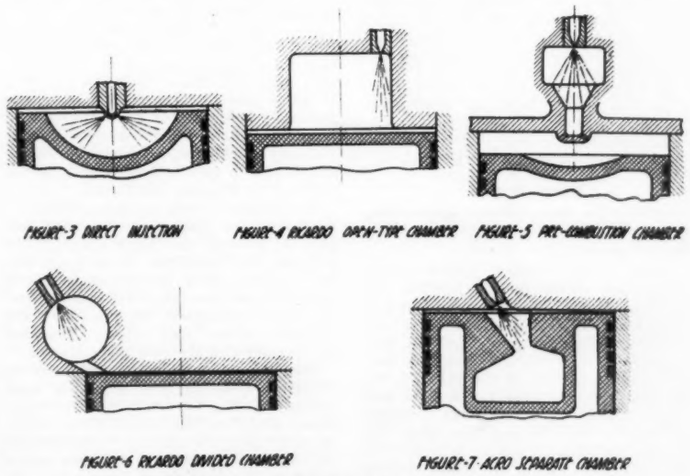
6. A. L. Clayden[8], Sun Oil Co., adds that "as long as the automobile ideal is the highest possible power from the lightest and least costly engine, and as long as we have plenty of cheap petroleum, it seems almost impossible that anything could displace the gasoline motor for passenger cars."

During the last few years considerable progress has been made in this country in the development of the automotive-type Diesel. Although the semi-Diesel or spark-ignition Diesel engine is being used commercially to some extent, the present trend in design appears to be toward the compression-ignition airless-injection Diesel. This paper, therefore, is limited to a discussion of this latter type. As noted in Table 1, the compression-ignition type Diesel now approximates the gasoline truck and bus engine quite closely as to cost, speed, weight and performance. In comparison with the high-speed automobile engine, however, the Diesel still has a long and difficult road to travel.

### Combustion Cycles Compared

Combustion in the high-speed compression-ignition Diesel is similar in many ways to combustion in the spark-ignition gasoline engine, as shown graphically by Ricardo[10] in Figure 1. In fact the combustion cycle necessary for high-speed operation resembles the constant-volume (Otto) cycle of the gasoline engine more closely than it does the true constant-pressure cycle patented many years ago by Doctor Diesel.

In the gasoline engine all the fuel and air are taken into the cylinder during the suction stroke in a thoroughly intermixed and highly inflammable state. This mixture of fuel and air is compressed. Ignition is brought about shortly before the end of the compression stroke by the passage of a spark across the electrodes of a spark plug. From the time the inlet




*Methods used for injecting fuel in engine*

valve opens to the point at which the fuel ignites, there are approximately 360 degrees of crank angle in which to prepare the fuel for combustion.

In the Diesel engine, however, air only is taken into the cylinder during the suction stroke. Air only is compressed. The fuel is injected shortly before the end of the compression stroke and ignited by the heat of compression. Injection, penetration and intermixing take

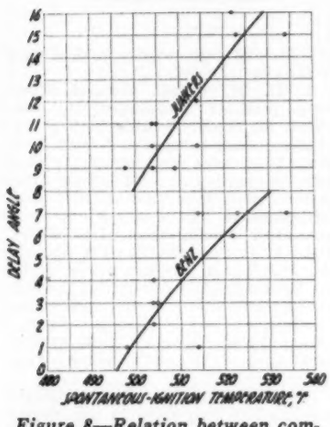



*Figure 8—Relation between combustion shock (delay angle) and spontaneous-ignition temperature*

place within approximately 30 degrees of crank angle.

### Gasoline Engine

Combustion in the gasoline engine may be considered as taking place in two phases:

Phase 1—The delay period during which the flame nucleus is developed without any perceptible rise in pressure. This period, the time between the passage of the spark and the beginning of a rapid rise in pressure, depends upon:

(a) Chemical nature of the fuel.
(b) Mixture strength.
(c) Temperature and pressure of the charge.
(d) Degree of turbulence.

Phase 2—The period of rapid pressure rise during which the flame is spread throughout the combustion chamber. The rate of pressure rise, which governs the knocking (detonation) characteristics of an engine, depends upon:

(a) Size and shape of combustion chamber.
(b) Degree of turbulence.
(c) Chemical nature of the fuel.

### Diesel Engine

Combustion in the Diesel engine may be considered as taking place in three distinct phases:

Phase 1—The delay period during which part of the fuel is injected and the flame nucleus developed without any appreciable rise in pressure. It is suggested by Ricardo[10] that "ignition first starts from some nucleus point as soon as a minute portion of the injected fuel has had time to vaporize and to mix with sufficient oxygen to form a readily combustible mixture, and that from this nucleus the flame spreads in much the same manner as in a spark-ignition petrol/air mixture during the first phase." This period, the time between the beginning of injection and the beginning of a rapid rise in pressure, depends upon:

(a) Chemical nature of the fuel.
(b) Temperature and pressure of the air at the time of injection.
(c) Rate of injection.
(d) Degree of atomization.
(e) Degree of turbulence.

Phase 2—The period of rapid pressure rise in which the fuel already injected during the delay period burns at a rate controlled only by combustion chamber design, degree of turbulence, and in a small way perhaps by the chemical nature of the fuel itself. Part of the fuel charge is also injected during this phase, but its effect on the rate of pressure rise is relatively small. As in the gasoline engine, knocking (combustion shock) in the Diesel engine is definitely related to the rate of pressure rise, i.e., the greater the rate of pressure rise the greater the knock intensity.

Phase 3—The period of almost constant pressure during which the fuel burns substantially as it is injected. By controlling the rate of injection this pressure can be varied either to bring about a further rise in pressure or to maintain constant pressure.

### Theory of Combustion

Combustion in the Diesel engine, according to G. D. Boerlage and J. J. Broeze,[11] Royal Dutch Shell Laboratories at Delft, Holland, is controlled by both the physical and chemical characteristics of the fuel. They have found that, within wide limits, the physical characteristics such as viscosity, surface tension, specific gravity and volatility may be dis-

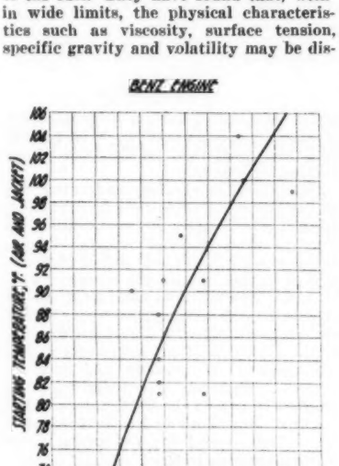



*Figure 9—Relation between ease of starting (starting temp.) and spontaneous-ignition temperature*

regarded, but that greater importance must be given to the chemical characteristics which determine the reactivity and thermal stability of the fuel.

Boerlage and Broeze[11] have found that those fuels which crack readily or contain large proportions of readily crackable materials have the best ignition qualities, and that those fuels which are thermally more stable have the poorest ignition qualities; furthermore, that preliminary cracking of a fuel lowers its ignition quality in direct proportion to the severity of cracking conditions.

They suggest that thermal stability is dependent on molecular structure and that in general the more compact the molecule the higher the thermal stability. By this reasoning straight-chain saturated hydrocarbons are least stable; double bonds strengthen the molecule; and aromatic rings and highly branched chain molecules are still more stable.

They report that cetene and tetraisobutylene, although they have the same formula, $C_{16}H_{32}$, have widely different ignition qualities. The reason given is that in molecular structure tetraisobutylene has a very compact form while the cetene molecule is a straight chain.

M. Hoffman,[12] Waukesha Motor Co., also suggests that "the determining factor in a fuel's resistance to ignition is the way carbon and hydrogen atoms are tied together in the molecule. In the paraffins and olefins, the C and H atoms are loosely connected in the form of a chain which can be easily broken by the heat and thus made to combine with oxygen; therefore, these two groups have a low resistance to ignition and consequently a short delay period.

"In the aromatic molecule, the C and H atoms form a closed ring, braced inside, which offers a large resistance to their decomposition by heat. This resistance makes fuels of this nature have a long delay period.

"The molecular structure of the naphthenes ranges in between the paraffins and the aromatics, as does their delay period. As a rule, however, they range much closer to the paraffins and olefins than to the aromatics."

Boerlage and Broeze in collaboration with van Dijck[11] advance the theory that "ignition in oil (Diesel) engines is the result of a reaction whereby oxygen combines with the free radicals formed by the cracking of the fuel molecules. . . . in the highly strung stage just before its rupture, the hydrocarbon molecule is already abnormally sensitive to oxygen. . . . the reaction velocity, and thus the heat formation per unit of time, is proportional to the number of bonds broken per unit of time.

"As soon as fuel is injected, part of it rapidly attains a temperature high enough to initiate cracking. The vapor that is formed, partly by the very action of atomizing and partly by the movement of the drops through the hot air, is in this respect in a favorable condition. The liquid drops themselves can be considered to remain quite cold from the viewpoint of cracking. They are evaporated rapidly enough after the flame has formed. During the delay period the quantities of heat given off by the beginning of combustion serve to increase the temperature on the spot and will promote evaporation and cracking. Apparently some definite temperature must be reached somewhere to change suddenly the velocity of reaction from the low velocity during the delay period to the high velocity during Phase 2."

Le Mesurier and Stansfield,[13] Anglo-Persian Oil Co., believe that ". . . paraffin hydrocarbons combine with oxygen to form unstable peroxides, and while

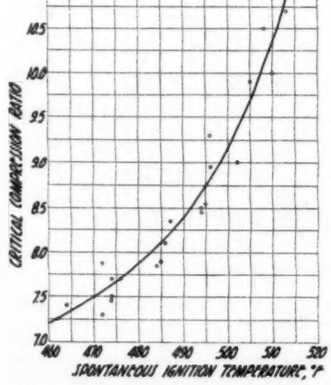



*Figure 10—Relation between critical compression ratio and spontaneous-ignition temperature*

the aromatics may not ignite in quite the same way, all natural fuels contain sufficient paraffins for these to determine ignition, other types of hydrocarbons acting as high ignition temperature diluents, and so increasing the time before ignition starts."

They suggest that "the fuel abstracts heat from the air until the conditions necessary for slow ignition are reached, and then the temperature of the fuel particles begins to rise; the air temperature increases, and very soon a sufficient mass of fuel is burning to show a pressure rise on the indicator diagram."

### Diesel Fuels

In general, Diesel fuels may be derived from petroleum, shale, or coal tar. For high-speed work it is agreed that fuels of a paraffinic nature give the best results. Coal-tar oils and petroleum and shale oils of an aromatic nature are less suitable because of their poor ignition qualities. According to D. A. Howes,[14] member of the Institution of Petroleum Technologists, "this eliminates any possibility of utilizing coal-tar oil, creosote, etc., and all other aromatic oils produced by high and low-temperature carbonization or hydrogenation of coal."

### Must Use Oil

It is apparent, therefore, that substantially all Diesel fuel must come from petroleum, which, in this country at least, offers the cheapest and most convenient source.

Among those who have not given particular attention to the subject, the notion is generally entertained that the Diesel engine can operate satisfactorily on crude oil or almost any kind of oil

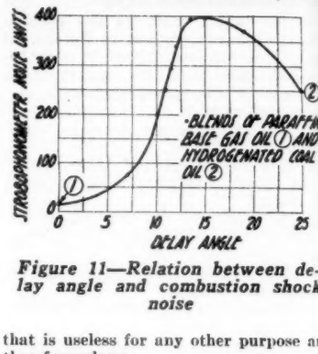

GARDNER ENGINE - 1000 R.P.M.
450 LBS./SQ. IN. COMPRESSION PRESSURE
STROBOHOMETER NOISE UNITS
BLENDS OF PARAFFIN BASE GAS OIL ① AND HYDROGENATED COAL OIL ②
DELAY ANGLE

*Figure 11—Relation between delay angle and combustion shock noise*

that is useless for any other purpose and therefore cheap.

This is an error. It is partly true in the case of the heavy slow-speed Diesel. The high-speed Diesel, however, is far more discriminating in its choice of fuels. Some fuels that function satisfactorily in the slow-speed type have been found to be unsuitable for high-speed operation. The reason for this is that the slow-speed Diesel usually operates at constant speed (150-300 r.p.m.) and full load; changes in fuel quality, if apparent, can be easily compensated for by minor engine adjustments without affecting engine performance. The high-speed Diesel, on the other hand, must often work under less favorable conditions, i.e., wide variations in speed and load. Fuel quality plays a more important part.

It is evident, therefore, that a full realization of the possibilities of the high-speed automotive-type Diesel will depend upon the availability of a plentiful and certain supply of fuel at a reasonable price. Commercial as well as technical considerations must enter into the establishing of Diesel fuel standards in order to bring this about.

There is no use of setting up ideal

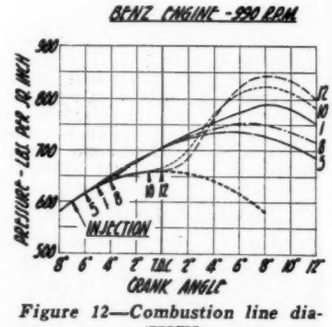



*Figure 12—Combustion line diagrams*

standards of Diesel fuel quality if the cost of producing and delivering such a fuel is so high as to wipe out or greatly reduce the advantages which its superior fuel economy gives to the Diesel as compared with the gasoline engine.

### Characteristics Opposite

The ideal Diesel fuel is almost exactly opposite in its characteristics to the ideal gasoline, as at present understood. Uncracked paraffinic oil best suits the Diesel. Cracked gasoline best suits the automobile engine.

Gasoline-driven motor cars are again increasing in numbers and all signs point to a continued increase. That means

cracking must continue to increase in greater proportion.

If the refiner is to be called on to withhold more and more of his oil from his cracking stills in order to make paraffinic Diesel fuel, it seems likely that he will have to get a price for it that will wipe out a large part of the Diesel's advantage.

The better the Diesel can be adapted to burn pressure-distillate bottoms, or other secondary products of cracking, the more widespread will be its success.

There are differences of opinion as to what constitutes a satisfactory high-speed Diesel fuel. A survey[16] conducted in England among a number of engine manufacturers indicates that, for the automotive-type Diesel in its present state of development, the only essential properties are:

"1. Good ignition quality as measured by some form of engine test.

"2. Suitable viscosity (sufficiently low to flow easily at the lowest working temperature without causing pump leakage; and sufficiently high to lubricate effectively the pump and injection system parts).

"3. Absence of adventitious solid impurity (which might choke filters and clog injection nozzles).

"4. No separation of wax at the lowest temperature to which the fuel is subjected."

Of these properties ignition quality is generally recognized as the most important. Like antiknock value, ignition quality governs the smoothness with which combustion takes place. There is this essential difference, however. In the gasoline engine, antiknock value determines the highest compression pressure

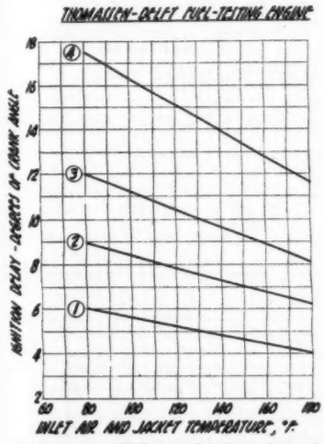



*Figure 13—Effect of inlet air and jacket temperature on ignition delay*

possible without detonation; while in the Diesel engine, ignition quality determines the lowest compression pressure which will insure spontaneous ignition of the fuel without combustion shock.

Low compression pressures mean low cost and low weight (pounds per brake horsepower), both of which are essential if the Diesel is to compete satisfactorily with the gasoline engine.

We do not believe, however, that engines which require special fuels of high ignition quality will gain in popularity. It is possible to build engines which have comparatively low compression pressures and, at the same time, are largely indifferent to ignition quality. The trend in future Diesel design, according to J. J. Broeze[16] of the Royal Dutch-Shell Co., is toward the "omnivorous" engine which will satisfactorily burn fuels of average ignition quality.

Laboratory inspection data on a number of Diesel fuels are given in Tables 2 and 3.

### Fuel Dopes

Ignition accelerators or dopes such as ethyl nitrate, amyl nitrite, acetaldehyde, and benzaldehyde have been discovered which will improve the ignition qualities of certain fuels. Their use commercially, however, is restricted because:

1. Ethyl nitrate and amyl nitrite are too expensive.
2. Acetaldehyde is too volatile.
3. Benzaldehyde decomposes too rapidly.

The effectiveness of ethyl nitrate is illustrated in Figure 2 by J. G. Withers[19] of the Anglo-Persian Oil Co.

**TABLE 2*—LABORATORY INSPECTION DATA**

| | Sample No. 1 | 5 | 8 | 10 | 12 |
|---|---|---|---|---|---|
| Description of sample— | Distillate paraffinic | Gas oil Scotch shale paraffinic | Distillate naphthenic | Distillate naphthenic | Residue naphthenic |
| Gravity, °A.P.I. | 31.7 | 38.4 | 34.0 | 25.0 | 20.8 |
| I.B.P., °F. | 492 | 401 | 439 | 457 | 381 |
| 10 per cent | 522 | 450 | 461 | 471 | 461 |
| 20 per cent | 543 | 480 | 480 | 484 | 493 |
| 50 per cent | 582 | 520 | 529 | 525 | 570 |
| 90 per cent | ... | 572 | 651 | 630 | ... |
| E.P., °F. | 662 | 662 | 662 | 662 | 662 |
| Residue, per cent | 11.0 | 3.5 | 8.5 | 5.0 | 27.5 |
| Flashpoint, °F. | 236 | 182 | 208 | 206 | 178 |
| Spontaneous— | | | | | |
| Ignition temp., °F. | 504 | 514 | 504 | 522 | 523 |
| Delay angle— | | | | | |
| 1. Junkers engine | 10 | 10 | 11 | 16 | 15 |
| 2. Benz engine | 2 | 1 | 3 | 6 | 7 |
| Starting temp., °F.— | | | | | |
| 1. Benz engine | 88 | 81 | 81 | 104 | 100 |

*Reference 17.

**TABLE 3*—LABORATORY INSPECTION DATA**

| | Sample No. 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Description of sample— | Reference Diesel fuel | Reference kerosene | American gas oil | Russian fuel oil | English gas oil | Cracked furnace oil | Cracked furnace oil | German tar oil |
| Gravity, °A.P.I. | 44.7 | 48.6 | 34.2 | 32.1 | 26.2 | 19.7 | 19.5 | 1.4 |
| I.B.P., °F. | 250 | 240 | 360 | 360 | 420 | 420 | 400 | 420 |
| 10 per cent | 350 | 336 | 436 | 430 | 470 | 466 | 435 | 434 |
| 20 per cent | 394 | 377 | 475 | 472 | 507 | 486 | 458 | 449 |
| 50 per cent | 455 | 424 | 526 | 530 | 567 | 536 | 500 | 500 |
| 90 per cent | 543 | 472 | 589 | 630 | 660 | 636 | 582 | 504 |
| E.P., °F. | 568 | 514 | 590 | 656 | 693 | 654 | 594 | 620 |
| Flashpoint, °F. | 164 | 144 | 212 | 182 | 208 | 208 | 202 | 184 |
| Firepoint, °F. | 168 | 146 | 234 | 190 | 230 | 226 | 220 | 192 |
| Viscosity Saybolt at 100° F. | 37 | 34 | 42 | 44 | 43 | 45 | 40 | 44 |
| Critical comp. ratio | 7.0 | 7.7 | 7.7 | 8.0 | 8.3 | 10.2 | 12.2 | 19.5 |

*Reference 18.

### Turbulence

One of the major problems in high-speed Diesel operation is to contact the fuel particles and air with sufficient relative motion so that the products of combustion may be speedily replaced with fresh air.

The proper amount of air movement, i.e., turbulence, depends on engine speed and shape of combustion chamber. In general, the more violent the turbulence the more rapid the spread of inflammation. If the turbulence is too violent, however, ignition will be retarded because of a lowering of the temperature in the immediate vicinity of the flame nucleus. On the other hand, if the air movement is too slow, incomplete combustion may result due to insufficient intermixing of fuel and air.

### Types of High-Speed Diesels

There are three general types of high-speed Diesel engines as evidenced by combustion chamber design and method of injection:

1. Direct injection.
2. Precombustion chamber.
3. Divided combustion chamber.

The direct-injection Diesel, shown in Figure 3, offers one of the most efficient solutions to the combustion and heat-control problems. Heat losses are low because of the low surface volume ratio of the compact combustion chamber. Starting from cold is accomplished easily without the use of electric heater plugs. The cylinder head is similar in design to the conventional valve-in-head gasoline engine. Fuel is injected directly into the combustion chamber which is formed between the piston and cylinder head; here it comes in immediate contact with the entire air charge. The disadvantages of this type are: Sensitivity to ignition quality, liability to smoke, high injection pressure and small spray holes.

### Direct Injection

The Ricardo open-type chamber, shown in Figure 4, is a modified form of direct injection. This type has been used in conjunction with a sleeve-valve engine and in Ricardo's[20] opinion is one of the most promising designs. The combustion chamber is shaped like an inverted pot into which the fuel is injected. The highly heated air sweeps past each drop of fuel as it is injected. In this manner the products of combustion are carried away as quickly as they are formed and fresh air brought in contact with the fuel particles. In this modified design, lower injection pressures and larger fuel drops can be effectively utilized.

In the precombustion chamber or antechamber type, shown in Figure 5, combustion takes place in two chambers. The fuel is injected directly into the precombustion chamber where approximately 25 per cent of the air charge is compressed. Phase 1 and part of Phase 2 of the combustion process take place in this chamber. The rapid pressure rise during Phase 2 forces the unburned fuel along with highly heated air and products of combustion through a number of small holes into the main chamber; here further combustion takes place. Starting from cold is more difficult and requires the use of heater plugs.

Fuel economy and power output are generally inferior due to the loss of heat in passing through the small holes connecting the two chambers. On the other hand, the precombustion chamber type is less sensitive to changes in ignition quality and can effectively utilize lower injection pressures and larger spray holes.

### Divided Chamber

The divided combustion chamber or separate-chamber Diesel, shown in Figure 6, represents a compromise between the conventional direct-injection and precombustion chamber types. The combustion chamber is divided into two parts. The first part is formed between the piston and cylinder head; the second is a separate chamber connected to the first by a large throat. Fuel is injected into the separate chamber where practically the entire air change is compressed. This chamber is spherical in shape and by its special design a large portion of the heat of combustion is held in the chamber walls. This heat added to the normal heat of compression effectively reduces the delay period.

The necessary turbulence for good combustion is created by the passage of the air from the main chamber to the separate chamber during the compression stroke and from the separate chamber to the main chamber during the expansion stroke.

The divided combustion-chamber design, shown in Figure 6, was developed at the Ricardo laboratory in England in conjunction with the Royal Dutch-Shell laboratories in Holland. It is known commercially as the Comet type and is incorporated in the Silver Comet engine used by the London General Omnibus Co. in England and in the Silver Comet engine manufactured by the Waukesha Motor Co. in this country. This type apparently has most of the desirable qualities of both the direct-injection and precombustion chamber designs, namely: High power, good fuel economy, low injection pressure, large spray holes, good turbulence, freedom from exhause smoke and ability to burn fuel of a wide range of ignition quality.

The Acro separate-chamber design is shown in Figure 7. The piston in this case acts as the separate chamber into which practically all the air is compressed. Fuel is injected into the passage connecting the two chambers. Like the Ricardo divided-chamber type, violent turbulence produced at the correct time is one of the important characteristics of this design.

### Rating Diesel Fuels

The performance of most high-speed Diesel engines with respect to ease of starting and freedom from combustion shock is influenced to a more or less degree by the ignition quality of the fuel. It is desirable, therefore, to have a simple and accurate standard means for evaluating ignition quality. A number of methods have been developed by various laboratories and published in the literature. Most of these are based on either spontaneous-ignition temperature, delay angle, or critical compression ratio.

In general, the lower the spontaneous-ignition temperature, the higher the ignition quality of the fuel. Likewise, the smaller the delay angle and the lower the critical compression ratio, the higher the ignition quality of the fuel. Information, however, is limited regarding the accuracy of this generalization:

1. Le Mesurier and Stansfield[17] find no definite (only a very general) relation between spontaneous-ignition temperature and either delay angle or starting temperature, Figures 8 and 9.

2. Hoffman[13] reports close correlation between delay angle and critical compression ratio; also, good agreement between the classification of fuels by the critical compression ratio method and results obtained in service.

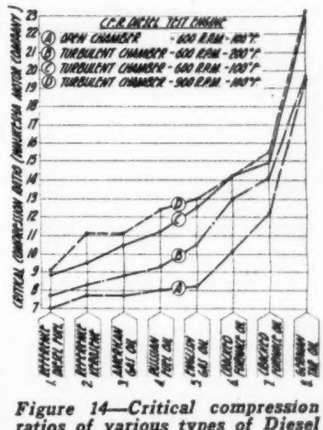

C.F.R. DIESEL TEST ENGINE
A OPEN CHAMBER - 600 R.P.M. - 100°F.
B TURBULENT CHAMBER - 600 R.P.M. - 100°F.
C TURBULENT CHAMBER - 600 R.P.M. - 100°F.
D TURBULENT CHAMBER - 900 R.P.M. - 100°F.
CRITICAL COMPRESSION RATIO (INJECTION WATER CORRECTED)
1 DIVIDED CHAMBER DIESEL FUEL
2 DIVIDED CHAMBER KEROSENE
3 AMERICAN GAS OIL
4 RUSSIAN FUEL OIL
5 ENGLISH GAS OIL
6 CRACKED FURNACE OIL
7 CRACKED FURNACE OIL
8 GERMAN TAR OIL

*Figure 14—Critical compression ratios of various types of Diesel fuels*

3. A. E. Becker and H. R. Stacey[20], Standard Oil Development Co., find a somewhat general relation between spontaneous-ignition temperature and critical compression ratio, Figure 10.

4. Boerlage and Broeze[11], on the other hand, find no definite relation between spontaneous-ignition temperature and behavior of fuels in service, but report close agreement between delay angles and performance in various commercial vehicles.

The apparatus most commonly used for determining spontaneous-ignition temperature is the Moore-type oxygen bomb[20], operated under the following conditions:

| | |
|---|---|
| Oxygen flow, cc. per minute | 100 |
| Drop size, mm. diameter | 2 |
| Rate of temp. rise, °F. per minute | 1 |

The spontaneous-ignition temperature is the lowest temperature at which the fuel surrounded by oxygen in the bomb will ignite without the application of a spark. This temperature is often referred to as self-ignition temperature, S.I.T., or ignition point and has no connection

(Continued on Page 45)

## Graphic Approximation of Heat Transfer Rates

(Continued from Page 13)

in the turbulent flow region. The equation for this line is

$$\frac{hD/k}{(cZ/K)^{0.4}} = 1.65\,DV/Z \quad . \quad . \quad . \quad . \quad (9)$$

Solving for h

$$h = 1.65\,\frac{k^{0.6}c^{0.4}v}{Z^{0.6}} \quad . \quad . \quad . \quad . \quad . \quad (10)$$

for petroleum oils the product $k^{0.6}c^{0.4}$ may be considered as equal to 0.74 and the resulting equation

$$h = 1.23\,\frac{V}{Z^{0.6}} \quad . \quad . \quad . \quad . \quad . \quad . \quad (11)$$

will still be within limits of accuracy already established in Equation 10.

Likewise for water $k^{0.6}c^{0.4} = 2.44$ and

$$h = 4.03\,\frac{V}{Z^{0.6}} \quad . \quad . \quad . \quad . \quad . \quad . \quad (12)$$

Figure 7 is a graphic representation of Equations 11 and 12, and is to be used only in turbulent flow. In order to solve Equations 7 or 8 or to use Figure 4, a value of H/h must be assumed. Figure 8 is a plot of H/h against V and Δ T and is a rough approximation of the Morris and Whitman data. The plot is approximate but may be used to estimate H/h for use in Figure 4. Figure 8 is only approximately valid for heating with steam and for cooling with water. Figure 8 is accurate enough to use in conjunction with Figure 4 in determining the correction factor, $\phi$.

Another use for Figure 8 is with Figure 7 in determining H. This is recommended only when a relative calculation is to be made with the conditions outside the tubes remaining constant while conditions inside tubes are varied.

### Auxiliary Charts

Figure 5 gives logarithmic MTD as a function of GTTD and LTTD. Figure 9 gives mass velocity as a function of linear velocity and specific gravity. Figure 10 can be used to convert capacities in cubic feet per second, in gallons per minute, or in 1,000 gallons per hour to velocity in feet per second for N number of standard diameter tubes in parallel. Figure 11 gives heat transfer area in square feet for standard size tubes.

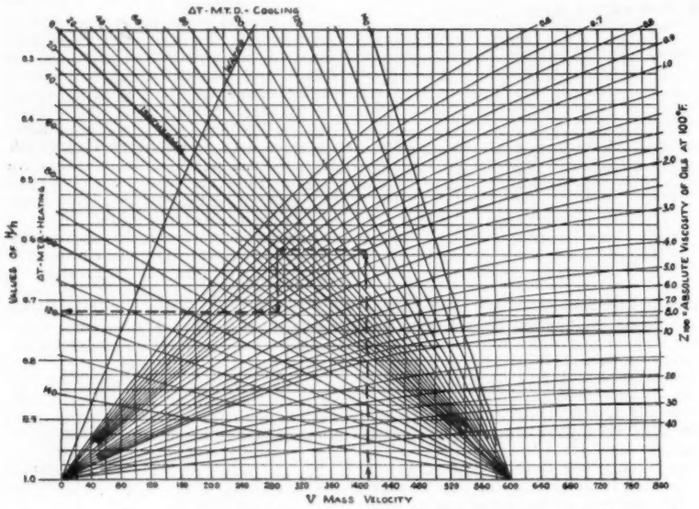



*Figure 8.—H/h as an approximate function of V, T, and $Z_{100}$. (To be used in conjunction with Fig. 4).*

### Use of Charts

The following example is presented to show one of the uses of the charts only and is not to be construed to represent any practice or recommendation for practice.

Problem: Find the number and length of 18 gauge 1-inch tubes in parallel that are required in heating 310 gallons of 40° A.P.I. (.825 specific gravity) gas oil per minute from 90° F. to 177° F. with atmospheric steam if the average linear velocity through the tubes is to be 8 feet per second.

**Solution of Problem**

GTTD = 212 — 90 = 122° F.

LTTD = 212 — 177 = 35° F.

Δ T (MTD from Figure 5) = 70° F.

parallel to handle 310 g.p.m. with a velocity of 8 feet per second.

The total duty of the heater is:

$$Q = 310\times60\times6.87\,(1.77—90)\,0.522 = 5{,}630{,}000 \text{ B.t.u./hour}$$

From Figure 8, H/h = .72

From Figure 4, $\phi_h$ = 0.9

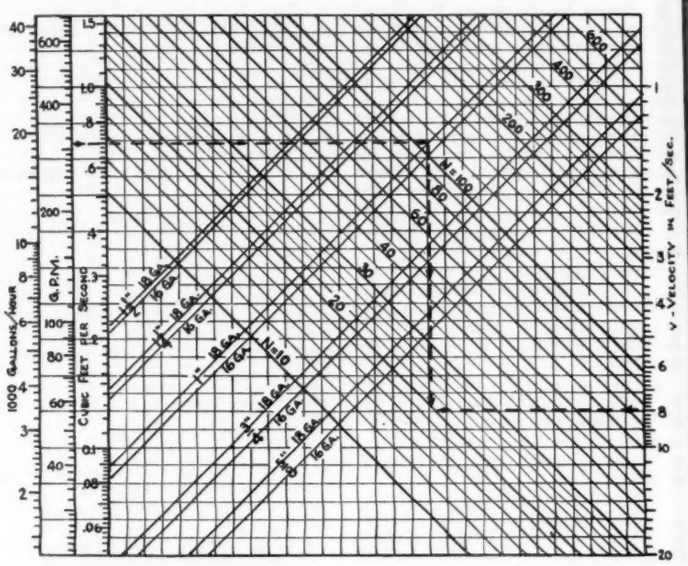



*Figure 10.—Velocity as a function of tube size, number of tubes and volume*

The mean body temperature of the oil is

$$\frac{90 + 177}{2} = 133.5° \text{ F.}$$

The viscosity at 100° F. = 2.0 centipoises.

The viscosity at 133.5° F. = 1.3 centipoises.

The specific heat at 133.5° F. = 0.522 centipoises.

From Figure 9 the mass velocity = 410 lb./sq.ft./sec.

From Figure 10 it is found that it takes twenty 18 gauge 1-inch tubes in

Therefore

$$Z = 0.9 \times 1.3 = 1.17$$

From Figure 7 the film coefficient, h, of the oil is found to be 465 B.t.u./hour/sq. ft./°F.

The overall coefficient will be approximately

H=465×0.72=335 B.t.u./hr./sq.ft./°F.

The area,

$$A = \frac{Q}{H\,\Delta T} = \frac{5{,}630{,}000}{335 \times 70} = 240 \text{ sq. ft.}$$

Using three sections in series the area

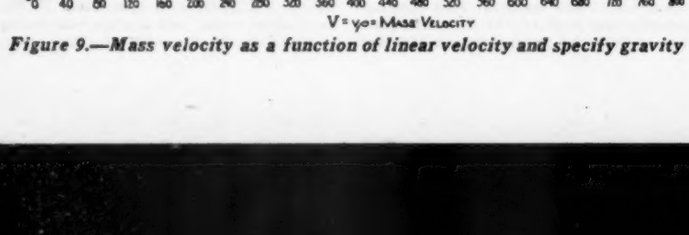



*Figure 9.—Mass velocity as a function of linear velocity and specify gravity*

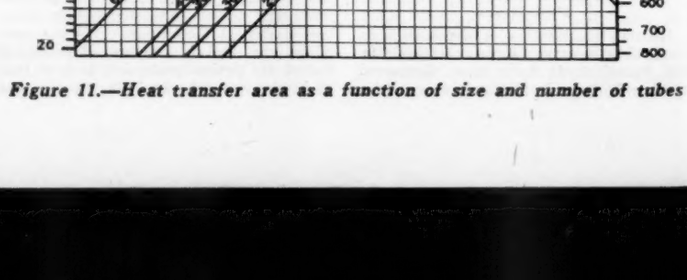



*Figure 11.—Heat transfer area as a function of size and number of tubes*

for each section will be 80 square feet. From Figure 11 it is found that the nearest standard length of tubes is 200 inches.

**Nomenclature**

D = inside diameter of tube in inches.
v = fluid velocity in feet/seconds (average).
V = mass velocity of fluid in pounds/square feet/seconds = $v\rho$, where $\rho$ = density in pounds/cubic foot.
S = specific gravity of the fluid.
Z = absolute viscosity of flow in centipoises.
C = specific heat of the fluid at constant pressure.
Q = quantity of heat flowing in B.t.u./hour.
A = area of heating surface in square feet.
H = overall heat transfer coefficient in B.t.u./hour/square feet/°F.
$\Delta t$ = temperature drop across the film in °F.
$\Delta T$ = mean temperature drop from one fluid to the other in °F.
k = thermal conductivity of fluid in B.t.u./hour/square feet/in./°F.
h = film coefficient in B.t.u./hour/square feet/°F.
f = friction factor.

Subscript i when applied to f or Z refers to isothermal flow.

Subscripts h and c refer to heating and cooling condition, respectively.

GTTD = greatest terminal temperature difference.
LTTD = least terminal temperature difference.
MTD = $\Delta$ T.

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## Diesel Not Likely to Replace Gasoline Motor

(Continued from Page 41)

or direct relation to flashpoint or firepoint.

The delay-angle method was developed by Boerlage and Broeze[11] in the laboratories of the Royal Dutch-Shell Co. Delay angle is often referred to as delay period, delay, ignition lag, or ignition-delay angle and represents the angle through which the crankshaft travels from the time the fuel is injected until it ignites.

In most high-speed Diesel engines the greater the delay angle the greater the amount of fuel present in the combustion chamber at the beginning of the period of rapid pressure rise and the greater the combustion shock, as shown in part by Withers[10] in Figure 11 and by Le Mesurier and Stansfield[17] in Figure 12. It should be noted that an exceptionally long delay period decreases combustion shock. This is due to late ignition and results in poor engine performance, incomplete combustion and smoke.

Delay angle and consequently combustion shock can be reduced by increasing the temperature of the compressed air in the combustion chamber, either through higher compression pressures or higher inlet air and jacket temperatures as shown by Boerlage and Broeze[11] in Figure 13 using a single-cylinder laboratory test engine as an illustration. However, this plan is not recommended commercially because higher inlet air temperatures mean lower volumetric efficiency; higher jacket temperatures (above approximately 180° F.) mean greater engine wear; and higher compression pressures mean greater engine weight.

Hoffman[21] suggests that delay angles can be reduced effectively and practically by changes in engine design to:

1. Automatically increase the compression pressure and temperature at the higher engine speeds through correct valve action.

2. Intentionally create hot zones in the combustion chamber through which the fuel spray must travel before it starts to burn.

The critical compression ratio method for evaluating ignition quality was developed by A. W. Pope and J. A. Murdock[25] of the Waukesha Motor Co. The critical compression ratio is determined in a modified CFR engine by motoring it (i.e., driving the engine by means of a synchronous motor) and increasing the compression until audible combustion occurs. The critical ratio of a fuel is considered to be the ratio halfway between the ratio for audible combustion and no combustion. As shown by Pope[18] in Figure 14, this ratio can be varied through changes in engine operating conditions. It is concluded, therefore, by Pope that the critical compression ratio method "can be made to correlate with the average commercial operating condition."

When rating fuels by either the delay angle or critical compression ratio methods, Boerlage and Broeze[11] advocate the use of reference fuels in order to minimize the effect of engine and atmospheric variables. They suggest cetene and α-methyl naphthalene. Cetene has the highest ignition quality of any known Diesel fuel while α-methyl naphthalene has practically the lowest. Both fuels have suitable viscosities for good pump and injector operation and cover the full range of Diesel fuels. Ratings are expressed in terms of cetene numbers, i.e., per cent cetene in a mixture of cetene and α-methyl naphthalene.

From recent work in this country and in Europe, indications are that a laboratory test method in which delay angles are determined in a regularly running engine is preferable to measurement of critical compression ratios in a motored engine.

Recently the necessary modifications were made to the CFR engine to permit delay angle measurements. The engine laboratory of the Royal Dutch-Shell Co. at Delft, Holland, and the motor laboratory of the Shell Petroleum Corp. at Wood River, Ill., co-operated with the Waukesha Motor Co. in this development work. The modified combustion chamber is similar to the Ricardo divided chamber shown in Figure 6. The compression ratio is varied by means of a movable compression plug in the separate chamber.

At present, 13 laboratories[22] in this country are participating in a test program to determine the relative merits of the various methods used for evaluating ignition qualities of Diesel fuels. From this work a standard laboratory test will be developed. It is hoped, therefore, that every effort will be made to stimulate intelligent and active co-operation between oil companies and the various manufacturers of high-speed Diesel engines.

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7. Standard Oil Development Co.
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(Continued on Next Page)

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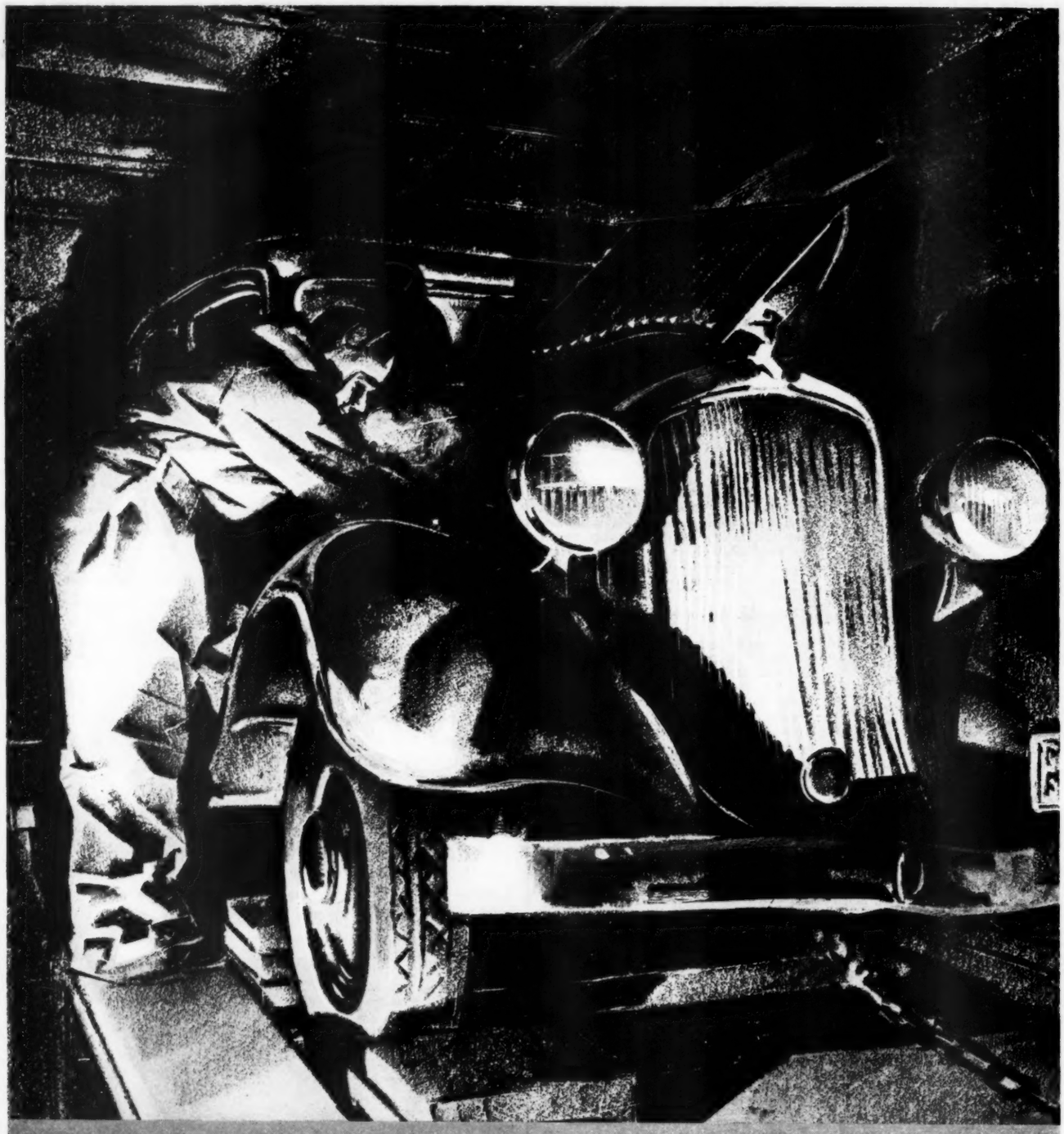

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(1) "Propose Establishment of Knock Rating for Diesel Fuels," 25, No. 6, 15 (1933).
(2) "Diesels to Forge Ahead on New Facts Learned About Fuels," 25, No. 17, 28 (1933).
(3) A. L. Clayden, "What the Refiner May Expect in Future Car Developments," 26, No. 3, 19 (1934).

8. Transactions of the American Society of Mechanical Engineers (A.S.M.E.):
(1) "Oil and Gas Power," Jan. 31, 1933.
(2) P. H. Schweitzer, "Combustion Knock in Diesel Engines," 54, June, 1932.

9. National Advisory Committee on Aeronautics (N.A.C.A.) Publications:
(1) A. M. Rothrock, "Combustion in a High-Speed Compression-Ignition Engine."
(2) A. M. Rothrock, "A Photographic Study of Combustion in a High-Speed Compression-Ignition Engine."

10. Automotive Industries (1934 Statistical Issue), 70, No. 8, 225-253 (1934).

11. World Petroleum Congress, London, July 19-25, 1933, Preprints:
(1) A. E. Becker and H. R. Stacey, "Measurement of Ignition Qualities of Diesel Fuels."
(2) A. W. Pope, "Measurement of Injection-Engine Fuel Ignition Properties."
(3) D. A. Howes, "Substitute Diesel Fuels."
(4) R. Stansfield, "The Ignition Quality of Fuels for Compression-Ignition Engines and Proposals for Its Determination."
(5) J. Kewley, "The Desirable Characteristics of Fuels for High-Speed Compression-Ignition Engines."

## DEATH OF D. E. O'BRIEN

SAN ANTONIO, Tex., June 30.—The death of D. E. (Gene) O'Brien removed from the oil industry one of the most widely experienced men it has known. Born in the heart of the Pennsylvania oil country 62 years ago he had devoted a half century to the industry. Not only has he followed the trend of production through every important section of the United States, but there is scarcely an important oil field in the world he had not known. He had a hand in the development of the fields of Rumania, Russia, Burma, Venezuela, Colombia, and Mexico. He was the last of three brothers, all of whom devoted their lives to the oil business. A brother died in Oklahoma only a few months ago.

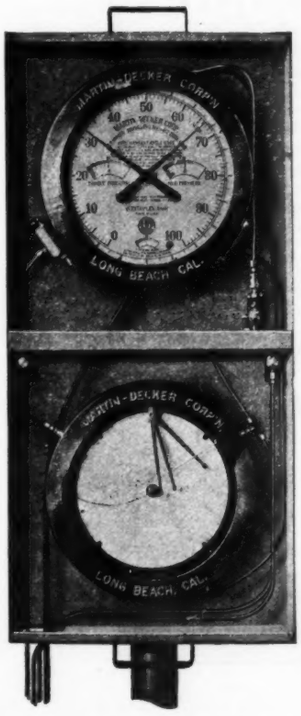
## Progress in Constructing Inter-American Highway

Congress has appropriated $1,000,000 to enable the United States to co-operate with the several governments, members of the Pan American Union, in connection with the survey and construction of the proposed Inter-American Highway, and in addition has authorized the Secretary of Agriculture to expend not more than $75,000 to provide for the continuation of the co-operative reconnaisance surveys and for making location surveys, plans, estimates, etc. Marked progress is being made towards the completion of the Mexican sections of the highway which will eventually provide intercommunication by automobile between all the countries of the American continents.

The U. S. Government offered to co-operate with our southern neighbors north of the Panama Canal in preparing surveys and plans of the projected highway and the offer was accepted by all except Mexico and Salvador. Both of these countries had already begun the work and were in a position to continue unassisted. They have, however, maintained very harmonious liaison with officials of this Government particularly in exchange of highway information.

As the program develops, the highway is expected to be extended through the countries south of the Panama Canal to Santiago, Chile; Buenos Aires, Argentina, and Rio de Janeiro, Brazil, utilizing so far as practicable existing roads.

Sometime within the next year, possibly sooner, Mexico will have completed the Nuevo Laredo-Mexico City section of this great highway and that section will, it is reported, be supplemented in the not distant future by another highway linking Nogales on the American border with Mexico City. The Mexican sections of the highway will be the first actually to join the two countries.


*Mid-Continent Distributors*
**Reed Roller Bit Company**
**Houston, Texas**

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A tachometer that indicates the proper table speed for highest drilling efficiency. This is the only instrument built that serves as a positive reaming indicator.

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A single, 12-inch, 3-pen recorder provides a record of weight, torque and mud pressure.

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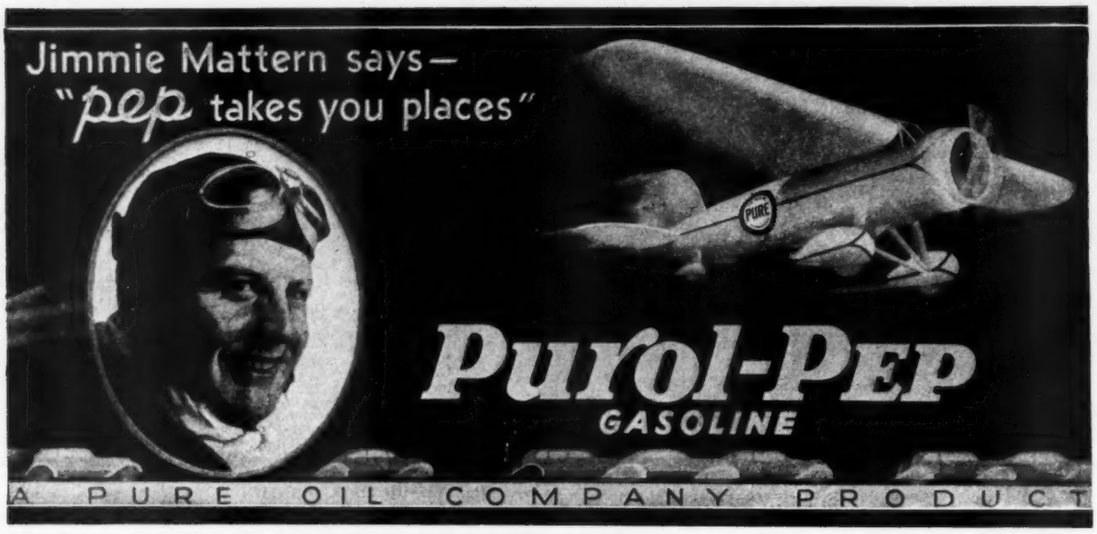
THE WEIGHT INDICATOR
**MARTIN DECKER CORP.**
LONG BEACH CALIFORNIA

San Joaquin Valley—A. F. McQuiston—OILDALE, CALIF.

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PRODUCERS, REFINERS, MARKETERS OF A COMPLETE LINE OF PETROLEUM PRODUCTS

**THE PURE OIL COMPANY • U. S. A.**

# East Texas Gasoline Market Uncertainty Influencing Jobbers in Chicago Area

By SPECIAL CORRESPONDENT

CHICAGO, July 2.—Uncertainty has continued to be foremost in the minds of the trade in surveying the outlook for petroleum markets. At the turn of the week, most speculation hinged on the question of how important marketwise the East Texas gasoline buying would prove to be. This has been influencing jobbers to remain out of the market for additional possible purchases. Jobbers appear not yet sold on the better outlook.

The general belief as the week opened was that a stronger price situation was at hand. This in some cases is reported to have influenced additional buying on the part of brokers. Still there has probably not been any extensive purchasing in anticipation of a rise. The market has appeared so delicately balanced, with possibilities of moving either way that few have wished to make excessively large commitments contingent on the possibilities. At the moment the undertone seems better and in anticipation of better East Texas conditions there is an encouraged aspect here and there.

### Local Cuts Continue

Persistent local tank wagon and service station price cuts have been harassing the general gasoline price structures more than might appear on the surface. Numerous points which enjoyed restored prices some weeks ago now have lost the advantage again. A sloppy tank car market has made it difficult to maintain the advanced levels. The Chicago situation is one of the worst of all, with the feud continuing between majors and independent-brand people, and with the jobber caught in the middle. Some large companies are reported feeling acutely in gallonage results the fact that the independents continue about one cent below their prices, despite the fact the majors are now three cents below normal. The individual brand group is determined to preserve this differential. Private belief here is that they will perhaps be able to maintain this condition unless the tank car market improves substantially.

The trade here is giving serious consideration to the plan for eliminating gasoline price wars, contained in the second report of the National Recovery Review Board. This permits an arbitrary declaration of a state of emergency by the administrator in any region, an inquiry by the regional marketing committee of the P and C committee involved, a temporary fixing of prices at any given level for "petroleum products" pending report of the committee and finally an action by the administrator as to permanent prices, thus giving him broad powers over the price structure. This suggestion is meeting with both commendation and criticism.

### Kerosene

With gasoline uncertain, kerosene has been inclined to show an easy and rather listless general appearance, prices little changed. Some demand has appeared from farmers rushing late crops in. The statistical position of the product appears good. East Texas offers of kerosene continue.

### Heating Oils

Heating oils, especially the distillates, are still easing a bit, but the reduced prices are drawing only a limited amount of attention from the distributors. A few of the latter are beginning to place material in storage. High grade gas oil is quiet. Zero fuels are in moderately good market position.

### Fuel Oils

Heavy industrial fuels are holding firm and steady, although demand has been hardly so brisk. Reports now indicate large consumers may be back in the market more substantially after July Fourth.

### Lubricants

Lubricants have changed little, but the undertone appears to be somewhat hesitant. Some anticipate future price declines. Motor oil business is running slightly irregular and spotty. Compounders and jobbers both seem to have preferred to stay out of the market for as long as possible.

## Crude Oil Prices

(Continued from Page 27)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

### Rocky Mountain States

| | |
|---|---|
| Iles, light (Sept. 29, 1933) | $.96 |
| Iles, heavy (Sept. 29, 1933) | .90 |
| Florence, Colo. (June 17, 1933) | .30 |
| Fort Collins and Wellington, Colo. (June 17) | (See Salt Creek prices) |
| Big Muddy (Sept. 29, 1933) | 1.01 |
| Frannie, light (May 1, 1934) | .70 |
| Frannie, heavy (Sept. 29, 1933) | .62 |
| Salt Creek and LaBarge (Sept. 9, 1933) | See Stanolind Mid-Continent price schedule |
| Grass Creek, light (Sept. 29, 1933) | 1.18 |
| Grass Creek, heavy (Dec. 15, 1932) | .45 |
| Elk Basin (Sept. 29, 1933) | 1.18 |
| Rock Creek (Sept. 29, 1933) | 1.02 |
| Dutton Creek (July 8, 1933) | See Mid-Continent gravity prices |
| Lance Creek (Dec. 16, 1932) | .92 |
| Poison Spider (Mar. 5, 1931) | .70 |
| Hudson (June 2, 1931) | .65 |
| Lander (Mar. 5, 1931) | .40 |
| Rex Lake (Feb. 22, 1930) | 1.10 |
| Osage | 1.08 |
| Lost Soldier (Sept. 30, 1933) | .88 |
| Hamilton Dome: | |
| Below 18° (July 1, 1934) | .52 |
| 18° and above (July 1, 1934) | .62 |
| Torchlight (Sept. 29, 1933) | 1.18 |
| Greybull (Sept. 29, 1933) | 1.18 |
| Pondera | 1.15 |
| Sunburst (Sept. 29, 1933) | 1.35 |
| Cat Creek, Montana | 1.07 |
| Hogback (Sept. 29, 1933) | 1.11 |
| Lea County, N Mex. (Sept. 29, 1933) | .75 |
| Maljamar (Sept. 29, 1933) | .70 |
| Artesia-Jackson (Dec. 1, 1933)* | .75 |

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co.

*Continental Oil Co.

### North Louisiana and Arkansas

| | |
|---|---|
| Smackover, Ark. (all grades) | $.70 |
| Tullos-Urania, La. (Jan. 13, 1934) | .87 |
| Nevada, Ark. (Sept. 29, 1933) | .60 |
| East El Dorado (Sept. 29, 1933) | .70 |
| Converse, La. (Mar. 17, 1934) | 1.03 |
| Elm Grove, La. (Sept. 29, 1933) | .75 |
| Holly, La. (Mar. 17, 1934) | 1.03 |
| Pleasant Hill, La. (Mar. 17, 1934) | 1.03 |
| Zwolle, La. (Mar. 17, 1934) | 1.03 |
| Champagnolle, Ark. (Mar. 17, 1934) | .81 |
| Lisbon, Ark. (Mar. 17, 1934) | 1.03 |
| Stephens, Ark. Sept. 29, 1933) | .70 |
| Urbana, Ark. (Mar. 17, 1934) | .60 |
| Other fields | (See gravity table) |

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Pleasant Hill by Standard Oil Co. and Magnolia Petroleum Co; Champagnolle by Standard Oil Co. and Lion Oil & Refining Co.

### Eastern States

TIDE WATER PIPE CO.
(Effective May 1, 1934)

| | |
|---|---|
| Bradford, Pa. | $2.55 |
| Allegany, N. Y. | 2.55 |

SOUTH PENN OIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines (Bradford Field) | $2.55 |
| Pennsylvania Grade Oil in Southwest Pennsylvania Lines | 2.22 |
| Pennsylvania Grade Oil in Eureka Pipe Line lines | 2.17 |
| Pennsylvania Grade Oil in Buckeye Pipe Line lines | 2.07 |
| Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933) | 1.32 |

PENNZOIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines: | |
| Group A | $2.47 |
| Includes Cochran, Franklin, Hamilton and Doolittle districts. | |
| Group B | 2.46 |
| Includes Titusville district. | |
| Group C | 2.45 |
| Includes Turkey and Tidioute districts. | |
| Group D | 2.44 |
| Includes Bear Creek and Porkey districts. | |
| Group E | 2.42 |
| Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City. | |

PURE OIL CO.
(Effective May 1, 1934)

| | |
|---|---|
| Cabin Creek, W. Va. | $2.17 |
| Bradford Hollow, W. Va. | 2.17 |
| Kelly Creek, W. Va. | 2.17 |

### Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

| | |
|---|---|
| Lima | $1.30 |
| Illinois (Jan. 5, 1934) | 1.13 |
| Princeton, Ind. (Jan. 5, 1934) | 1.13 |
| Plymouth | Shut in |
| Western Kentucky | 1.18 |
| Midland, Mich. (Sept. 30, 1933)* | 1.02 |
| Oceana, Mich. (Oct. 5, 1933) | .90 |
| Somerset, Ky. (Sept. 30, 1933) | 1.23 |
| Hart County, Ky. (Oct. 1, 1932) | 1.18 |

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

### Canada

Ontario (September 9, 1933):

| | |
|---|---|
| Petrolia* | $2.10 |
| Oil Springs | 2.17 |
| Turner Valley (May 21, 1934):† | |
| Clear Naphtha | $2.55 |
| Discolored naphtha | 2.31 |
| Crude oil, 50 gravity | 2.19 |
| Crude oil, 45 to 49.9 | 2.07 |
| Crude oil, 40 to 44.9 | 1.50 |

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

### Mexico

| | |
|---|---|
| Panuco* | $0.90 |

*F.o.b. ship, based on May transactions and exclusive of production and export taxes and bar dues.

## California Crude Oil Prices

**STANDARD OIL CO. OF CALIFORNIA**
**(Effective September 6, 1933)**

For current purchases of crude oil at the well (unless otherwise specified.) (All gravities above those quoted take highest price offered in that field.)

| Gravity— | Long Beach | Seal Beach, Alamitos Heights | Huntington Beach | Inglewood | Playa del Rey | Olinda, Brea Canyon | Athens-Rosecrans | Torrance | Richfield | Whittier, La Habra | Montebello | Santa Fe Springs | La Habra-Coyote | Midway-Sunset, Elk Hills, Buena Vista Hills | Lost Hills | Coalinga | Coyote |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-14.9 | $.65 | $.65 | $.65 | $.65 | $.65 | $.65 | .. | $.65 | $.65 | $.65 | $.65 | .... | $.65 | $.57 | $.57 | $.57 | $.65 |
| 15-15.9 | .65 | .65 | .69 | .69 | .66 | .69 | .... | .66 | .65 | .65 | .65 | .... | .65 | .... | .... | .... | .65 |
| 16-16.9 | .66 | .65 | .72 | .73 | .69 | .73 | .... | .69 | .67 | .68 | .65 | .... | .65 | .... | .... | .... | .65 |
| 17-17.9 | .69 | .65 | .75 | .76 | .72 | .76 | .... | .72 | .70 | .71 | .65 | .... | .68 | .... | .... | .... | .68 |
| 18-18.9 | .72 | .65 | .78 | .80 | .76 | .79 | .... | .76 | .74 | .74 | .65 | .... | .71 | .61 | .61 | .59 | .71 |
| 19-19.9 | .76 | .65 | .81 | .83 | .80 | .82 | .... | .78 | .78 | .78 | .65 | .... | .74 | .64 | .65 | .62 | .74 |
| 20-20.9 | .78 | .68 | .83 | .87 | .83 | .85 | .... | .81 | .82 | .81 | .66 | .... | .78 | .67 | .69 | .65 | .78 |
| 21-21.9 | .81 | .72 | .86 | .90 | .87 | .88 | .... | .83 | .85 | .84 | .69 | $.72 | .81 | .70 | .73 | .68 | .81 |
| 22-22.9 | .84 | .76 | .89 | .94 | .90 | .92 | .... | .85 | .89 | .87 | .72 | .76 | .84 | .73 | .76 | .72 | .84 |
| 23-23.9 | .88 | .81 | .92 | .97 | .94 | .95 | $.83 | .89 | .92 | .90 | .76 | .79 | .87 | .77 | .79 | .75 | .87 |
| 24-24.9 | .91 | .85 | .95 | 1.01 | .97 | .98 | .86 | .92 | .97 | .93 | .80 | .83 | .90 | .81 | .82 | .78 | .90 |
| 25-25.9 | .94 | .89 | .98 | .... | 1.00 | 1.01 | .90 | .95 | 1.00 | .... | .85 | .87 | .93 | .85 | .85 | .81 | .93 |
| 26-26.9 | .97 | .93 | 1.01 | .... | 1.04 | 1.04 | .94 | .98 | 1.04 | .... | .89 | .90 | .96 | .89 | .88 | .... | .96 |
| 27-27.9 | 1.00 | .98 | 1.04 | .... | .... | 1.07 | .97 | .... | 1.08 | .... | .... | .94 | .99 | .93 | .91 | .... | .99 |
| 28-28.9 | 1.03 | 1.02 | 1.07 | .... | .... | 1.10 | 1.01 | .... | 1.11 | .... | .... | .98 | 1.02 | .97 | .94 | .... | 1.02 |
| 29-29.9 | 1.06 | 1.05 | 1.09 | .... | .... | .... | 1.04 | .... | 1.15 | .. | .... | 1.01 | 1.05 | 1.01 | .97 | .... | 1.06 |
| 30-30.9 | 1.09 | 1.10 | 1.12 | .... | .... | .... | 1.08 | .... | .... | .... | .... | 1.05 | 1.09 | 1.05 | 1.00 | .... | 1.09 |
| 31-31.9 | .... | .... | .... | .... | .... | .... | 1.12 | .... | .... | .... | .... | 1.08 | 1.12 | 1.09 | .... | .... | 1.12 |
| 32-32.9 | .... | .... | .... | .... | .... | .... | 1.15 | .... | .... | .... | .... | 1.12 | 1.15 | 1.12 | .... | .... | 1.15 |
| 33-33.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.16 | 1.18 | 1.17 | .... | .... | 1.18 |
| 34-34.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.19 | 1.21 | .... | .... | .... | 1.21 |
| 35-35.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.23 | .... | .... | .... | .... | .... |
| 36-36.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.26 | .... | .... | .... | .... | .... |
| 37-37.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.30 | .... | .... | .... | .... | .... |
| 38-38.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.34 | .... | .... | .... | .... | .... |

**Additional Standard Oil Quotations**

**Elwood Terrace**—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

**Newhall**—14 degrees and over, 57 cents.

**McKittrick and Kern River**—14 degrees and over, 57 cents.

**Wheeler Ridge**—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

**Kettleman Hills**—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 82 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

# NEWS FOR PETROLEUM REFINERS

## Gasoline Consumption Up 8.75 Per Cent for April

Tax reports from the individual states indicate an increase in gasoline consumption in the United States of 8.75 per cent in April over March. The increase is partially accounted for by the seasonal variation that favors April, but the amount of the increase is more than normal and no doubt was aided by improved general business, greater vigilance in tax collections and the discontinuing of tax exemptions in a few states. The following table indicates the consumption of gasoline by states for the two months mentioned as compiled from the state tax reports by the American Petroleum Institute.

GASOLINE CONSUMPTION

(Gallons)

| | March, 1934 | April, 1934 |
|---|---|---|
| Alabama | 12,442,000 | 12,130,000 |
| Arizona | 6,064,000 | 6,027,000 |
| Arkansas | 10,407,000 | 10,536,000 |
| California | 136,314,000 | 122,688,000 |
| Colorado | 11,374,000 | 14,077,000 |
| Connecticut | 16,964,000 | 19,696,000 |
| Delaware | 2,695,000 | 3,353,000 |
| Dist. of Columbia | 7,679,000 | 8,766,000 |
| Florida | 24,278,000 | 20,454,000 |
| Georgia | 19,321,000 | 18,649,000 |
| Idaho | 4,769,000 | 5,325,000 |
| Illinois | 72,880,000 | 80,907,000 |
| Indiana | 34,617,000 | 36,569,000 |
| Iowa | 30,051,000 | 37,298,000 |
| Kansas | 27,877,000 | 31,159,000 |
| Kentucky | 13,078,000 | 14,480,000 |
| Louisiana | 13,415,000 | 14,119,000 |
| Maine | 5,623,000 | 6,853,000 |
| Maryland | 14,110,000 | 17,000,000 |
| Massachusetts | 39,181,000 | 44,976,000 |
| Michigan | 56,865,000 | 60,819,000 |
| Minnesota | 31,425,000 | 34,170,000 |
| Mississippi | 10,054,000 | 10,783,000 |
| Missouri | 36,596,000 | 38,224,000 |
| Montana | 5,824,000 | 7,415,000 |
| Nebraska | 16,255,000 | 18,158,000 |
| Nevada | 1,528,000 | 1,970,000 |
| New Hampshire | 3,889,000 | 4,815,000 |
| New Jersey | 50,651,000 | 52,930,000 |
| New Mexico | 2,755,000 | 4,210,800 |
| New York | 107,742,000 | 120,718,000 |
| North Carolina | 20,849,000 | 21,469,000 |
| North Dakota | 8,735,000 | 10,360,000 |
| Ohio | 69,816,000 | 79,988,000 |
| Oklahoma | 23,392,000 | 23,485,000 |
| Oregon | 13,152,000 | 14,615,000 |
| Pennsylvania | 82,370,000 | 89,439,000 |
| Rhode Island | 7,399,000 | 8,221,000 |
| South Carolina | 10,680,000 | 11,062,000 |
| South Dakota | 9,425,000 | 8,667,000 |
| Tennessee | 16,114,000 | 15,990,000 |
| Texas | 69,368,000 | 66,834,000 |
| Utah | 4,509,000 | 5,233,000 |
| Vermont | 2,842,000 | 3,040,000 |
| Virginia | 18,614,000 | 20,860,000 |
| Washington | 24,661,000 | 25,342,000 |
| West Virginia | 9,806,000 | 11,448,000 |
| Wisconsin | 30,842,000 | 30,537,000 |
| Wyoming | 3,633,000 | 3,061,000 |
| Total | 1,253,433,000 | 1,328,925,000 |
| Daily average | 40,433,000 | 44,298,000 |
| Change from previous year: | | |
| Total increase | | 106,925,000 |
| Percentage increase in daily average | | 8.75% |

### FORM FOR TAX EXEMPTION

The following exemption certificate has been modified slightly to meet the requirements of the 1934 revenue act. This form of exemption certificate should be used until the official form is released by the Bureau of Internal Revenue:

**Exemption Certificate**

(For use by producers of gasoline under Section 617(a) as amended.)

The undersigned hereby certifies that he is a producer of gasoline and holds certificate of registry No...., issued by the Collector of Internal Revenue at ....., and has filed bond with the collector at .....

It is understood that the undersigned is liable for tax as a producer of gasoline with respect to all gasoline sold or used by him, unless specifically exempted by law. It is also understood that the fraudulent use of this cerificate to secure exemption will subject the guilty parties to the penalties provided by law.

### DEFENDS DEALER CONTRACTS

FORT WORTH, Tex., July 2.—Continental Oil Co. is preparing to defend its position here in Federal Court July 5 in answer to a suit filed in Abilene by Lavergne F. Guinn, special assistant to the United States attorney general, alleging violation of the NRA petroleum code.

Continental will base its defense on a distinction, said to be recognized by the code authorities, between a price to exclusive dealers and straight tank wagon quotations. In exclusive dealer contracts, Continental and all other major companies guarantee a certain margin to the service station operator. The price to exclusive dealers often varies from the straight tank wagon price, it was explained by Continental officials here.

## Manufacturer's Bond May Have Cancellation Clause

Bonds to be filed by manufacturers of motor fuel and lubricants and importers of these products, made necessary after July 1, may contain a cancellation clause, according to a treasury decision of June 27.

The notice given internal revenue collectors by the treasury department includes the following: "Any bond filed on Treasury Department Form 929 by a manufacturer or producer of lubricating oil or by a producer or importer of gasoline, or on Treasury Department Form 929 by a purchaser or producer of crude petroleum, may be accepted with a cancellation clause incorporated therein, or annexed thereto, if such clause provides that:

"Any surety on the bond may at any time notify the principal and the Commissioner of Internal Revenue that he desires after a date named, which shall be at least 60 days after the receipt of notification by the commissioner, to be relieved of liability under said bond. If such notice is not thereafter in writing withdrawn the rights of the principal as supported by said bond shall be terminated on the date named in the notice (unless supported by other bond or bonds), and the surety shall be relieved from liability under said bond for any acts done wholly subsequent to said date. The surety shall, however, remain liable for any unpaid tax liability incurred by the principal before the effective moment of cancellation, in addition to the appropriate penalties and interest, unless the principal pays such tax and appropriate penalties and interest. Said notice may not be given by any agent of the surety, unless it is accompanied by power of attorney duly executed by the surety authorizing the agent to give such notice or by a verified statement that such power of attorney is on file with the Treasury Department."

Where the cancellation clause is contained in a document to be affixed to, or associated with, Treasury Department Forms 928 or 929 referred to above, such cancellation clause must be duly executed by the principal and surety in the same manner as the bond to which it pertains.

### ADD TO DENVER PLANT

Colorado-Midland Refineries, Inc., is adding an asphalt unit to its 1,000-bbl. plant near Denver, Colo., and when the work is completed the company will process crude from the Black Mountain district of Wyoming. When operating at capacity the company will produce gasoline, furnace distillates, gas oil, road oil and various grades of asphalt.

Operation of the 1,000-bbl. skimming unit is expected to start this week.

## Gasoline Output Allotted to One Controlling Unit

The request of the Continental Refining Co. for a revision of its gasoline production allocation for June prompted an interesting decision by the board of review. In substance the decision follows:

"The record discloses that the appellant owns a 10 per cent interest in a Dubbs cracking still located on property belonging to and which, the board understands, is physically operated by, the Pennzoil Co. and appellant asks the additional 2,551 bbls. gasoline production quota in order to permit its participation in the operation of that refinery unit to the extent of its usual production which amounts to approximately 5,000 bbls. of gasoline per month.

It is further disclosed that the appellant's gasoline stocks at the close of May, 1934, amounted to 10,669 bbls. and it apticipates shipments during June of 11,000 bbls. which would result in an inventory at the close of June, after producing 8,200 bbls. of gasoline as allocated, of 7,869 bbls. or 21 days' supply which would appear to be ample for current operating purposes.

The board heretofore has held (in the Pan American Refining Corp. appeal) that no company is entitled to an allocation for the production of gasoline beyond its own operated and controlled refining capacity nor a production allocation for gasoline produced for its account by another refiner. In other words, production quotas shall be allocated only to the actual operator of the refining equipment, therefore, the allocating agency for district No. 2 should include in the quota allotted to the Pennzoil Co. (assuming that this company actually operates this still) that part of the gasoline produced in the Dubbs cracking still for the account of the appellant, for, in view of the principle laid down in the decision above referred to, such allocation cannot be made to appelant.

In view of the facts presented it is, therefore, the decision of this board that the gasoline production quota established by the allocating agency for appellant during June, 1934, in refining district No. 2 be sustained and this appeal be denied. However, the allocating agency for district No. 2 is requested to make a careful survey of the situation of this appellant before fixing its July allocation in order to make certain that in the light of facts which appellant may present, if injustice has been done it, same may be rectified in an appropriate manner.

### ADDING RERUN UNIT

The Mid-Continent Petroleum Corp. will replace several old steam stills with a new 4,000-bbl. Foster Wheeler pressure distillate rerun unit, construction work to start this week. The demolition of the old stills and the construction of the new is covered by a contract with Foster Wheeler Engineering Corp. The new still is expected to be completed in about five months.

### DISCOUNT ON NO. 1 BURNER OIL

CHICAGO, July 2.—To enable owners of small domestic oil burner storage facilities to take advantage of the quantity dump discount on No. 1 burner oil, representative oil companies in the Chicago region have reduced to 100 gallons from 150 gallons the quantity necessary to obtain the 1-cent discount allowed on quantities. The dividing line on oils Nos. 2 and 3 remain at 150 gallons and on Nos. 4 and 5 at 400 gallons.

### JOHN LAPP CHAIRMAN

WASHINGTON, D. C., June 30.—Secretary Ickes has named John A. Lapp, Chicago, as impartial chairman of the arbitration board in dealing with the Cleveland gasoline controversy. Mr. Lapp is chairman of the Bituminous Coal Labor Board, Division 2, with headquarters in Chicago. Formerly he was president of the National Conference of Social Work, is author of numerous books in economic, social and political problems and was on the faculty of the Indiana State and Marquette Universities.

## Consistent Gain in Tax Collections for 3 Months

SACRAMENTO, Calif., July 2.—Continuing an upward trend begun last March, California gasoline taxes for May totaled $3,529,779.35, exceeding similar collections for the same month of last year by $270,304.02, John C. Corbett, member of the State Board of Equalization, said.

"Unbroken gains in the amount of gallonage subject to the state tax for a period of three months are gratifying indications of substantial improvement in business conditions.

"The increase in the gallonage taxed last month contrasted with May, 1933, is 8.2 per cent, showing that the trend is consistent, as the comparable percentage for April was 8.5.

"Distributions for summer months invariably show increased sales and it is reasonable to anticipate that at the current rate of increase, the gross tax for 1934 may approach $40,000,000."

Oil companies reporting sales of more than 1,000,000 gallons of gasoline for the past month are as follows:

| Name— | Gallons actually sold | Net taxable gallonage |
|---|---|---|
| Associated Oil Co. | 12,598,244 | 11,948,561 |
| Bush, R. R. | 1,013,030 | 1,016,270 |
| Caminol Co., Ltd. | 1,397,178 | 1,334,396 |
| General Pet. Corp. | 18,613,287 | 10,785,974 |
| Macmillan Pet. Corp. | 2,548,319 | 2,573,694 |
| Western Oil | 2,247,510 | 1,831,246 |
| Hancock Oil Co. | 3,084,966 | 2,784,966 |
| Richfield Oil Co. | 11,244,132 | 10,899,096 |
| Mohawk Pet. Co. | 1,144,079 | 1,155,463 |
| Norwalk Co. | 1,949,426 | 968,239 |
| Olympic Ref. Co. | 1,175,571 | 1,149,941 |
| Rio Grande Oil | 2,958,877 | 2,723,679 |
| Sunset Pacific Oil Co. | 2,238,331 | 410,556 |
| Seaside Oil | 3,060,281 | 1,220,231 |
| Shell Oil Co. | 25,813,463 | 14,159,649 |
| Standard Oil | 63,423,985 | 25,690,998 |
| Texas Co. | 6,181,086 | 6,099,763 |
| Union Oil Co. | 20,821,375 | 13,780,401 |
| Wilshire Oil Co. | 2,447,032 | 2,437,339 |

### MODIFY EXEMPTION FORM

The following exemption certificate has been modified slightly to meet the requirements of the 1934 Revenue Act. This form of exemption certificate should be used until the official form is released by the Bureau of Internal Revenue.

**Exemption Certificate**

(For use in connection with tax-free sales of lubricating oil to manufacturers under Section 601 (c) (1) or Section 620 (1)

The undersigned hereby certifies that he is a manufacturer or producer of lubricating oils, and holds certificate of registry No. ——, issued by the collector of internal revenue at ————, and has filed bond with the collector at ————, and that the lubricating oils purchased hereunder are for resale by him or use by him as material in the manufacture or production of lubricating oils or as a component part of lubricating oils to be manufactured or produced by him.

It is understood that the undersigned is liable for tax as the manufacturer or producer upon his resale, or upon his use otherwise than as specified above, of the oils purchased hereunder, unless specifically exempted by law.

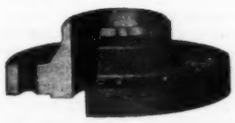
# ELIMINATE

## the difficulty of lining up bolt holes

**EXTRA STRONG CRANELAP WELDING NIPPLE**

No. 497-E for use with forged steel Cranelap Flanges. Beveled end, full thickness lap, for butt welding.

## in welded pipe lines



**FORGED STEEL WELDING NECK FLANGES**

No. 855-E Series 40 for use in welded pipe lines at various intervals to permit insertion of valves and other plant apparatus.

● When a valve or other apparatus must be placed in a welded pipe line, "Cranelap Welding Nipples" for use with Forged Steel Cranelap Flanges are your ideal combination. They offer all the advantages of swivel flange construction and eliminate the difficulty of lining up bolt holes. The Cranelap Welding Nipples are made from grade "A" seamless steel pipe, lapped to full pipe thickness on one end by the patented Cranelap process and beveled on the other end for welding. Send for new circular No. 302.

**90 DEGREE WELDING ELBOWS**

No. 352-E Elbow of standard pipe thickness, seamless, beveled for butt welding, made for use with Standard Weight Pipe or Tubing.

**WELDING TEE—EXTRA STRONG PIPE THICKNESS**

No. 353-E forged seamless. These extra strong, pipe thickness, welding tees are beveled for butt welding.

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# NATURAL GASOLINE MANUFACTURE

## Vapor Locking Discussed Before Transport Men

Vapor lock became the chief point of discussion in the meeting June 29 of the Petroleum Transport Association of Oklahoma at the Tulsa club in Tulsa. After a business meeting T. W. Legatski of the Phillips Petroleum Co. read a paper on the subject of the tendency of motor fuels to cause vapor locking, a brief summary of which follows:

"The fuel systems of automobiles are widely different in respect to their tendency to heat the gasoline on its way to the carburetor and hence to cause vapor locking. Approximately 90 per cent of the cars on the road today can use any gasoline encountered without trouble from vapor locking. In some of these cars the fuel systems are far from ideal. Nevertheless, the liquid gasoline is not excessively heated and the gasoline line does not get gas bound. A few cars have fuel systems which are almost ideal. Such cars could use extreme winter gasolines on hot summer days without encountering vapor lock. About 10 per cent of the cars on the road today have fuel systems which heat the liquid gasoline so much that under severe conditions (hot weather, fast driving, hard pull, tail wind) vapor lock will occur. Most of these vapor locking cars are so bad that trouble will be encountered with the big majority of the gasolines on the market.

When it is stated that 5 to 15 per cent of the cars will vapor lock with 50 to 75 per cent of the gasolines, it becomes very evident that there is far less difference in the vapor locking tendencies of gasolines than in the vapor locking ability of cars. Further, when it is stated that there are some cars on the road which could not be made to vapor lock on any kind of gasoline while there are others which will vapor lock with nearly all gasolines commercially available, it becomes still more evident that vapor locking is due to an oversight in the design of the fuel systems of a comparatively few cars.

The major points in connection with the phenomena of vapor locking which is so much discussed and yet so vaguely understood, may be summarized as follows:

Actual vapor lock is a very rare occurrence.

Vapor lock is the too early formation of gasoline vapor in a fuel line, which causes the adequate flow of liquid gasoline to be replaced by an inadequate flow of vaporized gasoline.

Vapor lock is fundamentally attributable to poorly designed (highly heated) fuel systems on automobiles.

The vapor locking tendency of gasolines in such poor fuel systems is determined by their tendency to boil which is conveniently measured in terms of pounds pressure.

The only way to decrease the tendency of gasolines to vapor lock in these few cars on hot days is to rob the gasoline of its most desirable qualities—easy starting, quick warm-up, pep. If this were done there would be no vapor lock complaints but there would be many other complaints of a more serious nature.

All commercial gasolines will give vapor lock under certain bad conditions; poorly designed fuel systems, hot weather, hard driving, engine out of order.

No commercial gasolines will give vapor lock under correct conditions of automobile fuel system design, which means the great majority.

Vapor locking difficulties cannot be avoided by changing from one competitive gasoline to another—if the new supply of

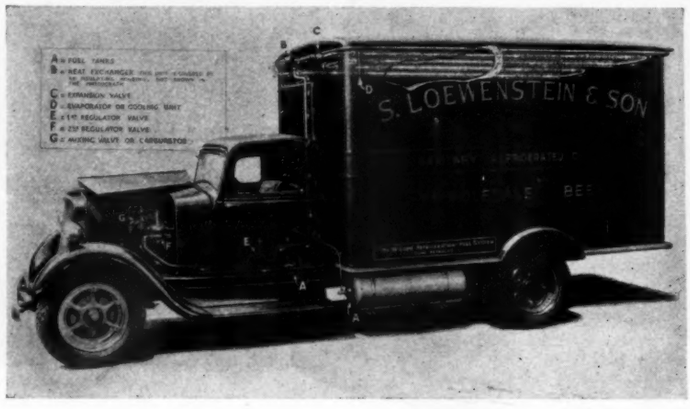
(Continued on Page 64)

## Liquefied Gas Refrigerates Compartment of Truck and Then Is Used as Fuel

The Shell Petroleum Corp., in co-operation with the McCord Radiator & Manufacturing Co. of Detroit, have perfected a system of truck refrigeration which uses Petrogas, the trade name for the Shell company's bottled propane.

The feature of the installations being made is that the same gas that cools the interior of the truck also drives the motor. The accompanying phantom picture gives a clear idea of the mechanism involved.

The two-ton Dodge truck (size of refrigerating compartment 6' x 6' x 11'), shown in the photograph was one of the first trucks to be equipped with this system east of the Rockies. By referring to the photograph it will be seen that the fuel, carried as a liquid at a pressure of




135 pounds in the twin cylinders, A, each containing approximately 23 gallons, is led upwards to the heat exchanger B, where the atmospheric heat of the liquid is removed. It then passes through the expansion valve C, from which it issues into the evaporator or cooling unit D as a saturated gas at a pressure of approximately 5 pounds. In its conversion from a liquid to a gas, heat absorption is effected and the truck body thereby refrigerated. The surface of the evaporator is so proportioned that the gas leaves in a perfectly dry state and passes through the heat exchanger B, where it absorbs the atmospheric heat of the incoming liquid fuel as above mentioned, and then passes through the diaphragm regulating valves E and F, where, in two stages, the pressure is reduced to atmospheric. The dry gas then passes to the McCord mixing valve and thence directly to the intake manifold.

The advantages of Petrogas in its dual role of fuel and refrigerant are many. Considered as a fuel alone, it is economical since it is marketed at approximately the same price, on a performance basis, as regular gasoline, and yet has very many advantages over even the highest test gasoline. It is further economical in that its use results in the total elimination of crankcase lubricating oil dilution, thus effecting a saving of approximately 50 per cent in oil costs.

Being a perfectly dry and homogeneous gas when it enters the manifold, even distribution to each cylinder is assured and the "hot spot" can be dispensed with, thereby permitting a less expanded charge of gas to be drawn into the cylinders than in the case of a gasoline-air mixture. As this fuel has a final boiling point of 40° below zero F., and becomes a dry gas at higher temperatures, motor starting is never dependent upon a change in mixture, and is, in fact, far easier than with the highest test gasoline.

Having an extremely high octane rating, it can be used advantageously on very high compression motors. Even with motors of ordinary compression, however, high efficiency is obtainable through its almost perfect combustion to eliminate crankcase oil dilution.

The advantages of this type of gas as a refrigerant are strikingly obvious, since the refrigeration effect is obtained as a by-product and at no cost whatever. Maintenance cost in the system is reduced to an absolute minimum as there are only a few valves to consider and no moving parts.

It should be noted in connection with this system that the amount of refrigeration which is created is in direct proportion to the quantity of fuel consumed by the motor and is equivalent to 180-185 B.t.u.'s per pound of fuel.

On runs where the motor is under load or partial load for the greater part of the time, an excess of refrigeration may be produced, but such excess may be controlled thermostatically in a simple manner. On runs where many stops are made, where the doors of the refrigerator compartment are opened a number of times, and where the motor is idle for long periods, the refrigeration is still adequate as will be seen from the following performance chart of the Lowenstein truck on June 4, 1934, a typical record:

| | |
|---|---|
| Date of test: June 4, 1934. | |
| Truck left Wayne | 11:10 A.M. |
| Truck returned warehouse | 6:00 P.M. |
| Elapsed time | 410 Min. |
| Engine idle (31 per cent) | 130 Min. |
| Engine under load (69 per cent) | 280 Min. |
| Number of stops made | 16 |
| Miles traveled | 120 |
| Load carried (pounds) | 5,261 |

**Hourly Temperatures**

| Time | U.S. report* (deg.) | Refrig. body (deg.) |
|---|---|---|
| 11:00 A.M. | 85 | 48 |
| 12:00 Noon | 90 | 42 |
| 1:00 P.M. | 91 | 44 |
| 2:00 P.M. | 92 | 46 |
| 3:00 P.M. | 94 | 46 |
| 4:00 P.M. | 94 | 46 |
| 5:00 P.M. | 93 | †42 |
| 6:00 P.M. | 89 | 44 |

*These reports were taken from the top of the Majestic Building in Detroit, and the figures are believed to be from 7 to 10 degrees lower than the temperature at the street level.

†Truck empty here.

## P. and C. Committee Likely to Tackle Natural Next

Faced with having to absorb a relatively large quantity of East Texas refinery gasoline and also some Mid-Continent natural gasoline labeled "distress," so-called major refiners who are participating in a plan of stabilizing the motor fuel market are naturally moving slowly. The relief of the East Texas situation will probably come first and will be in the form of a direct purchase of a large portion of the refinery stocks and then a sufficient quantity of the current production will be absorbed to permit orderly distribution of the entire Mid-Continent motor fuel production.

In alleviating the natural market, progress is reported by the combined natural gasoline and refinery committee in furthering a program of a more generous use of natural gasoline among Eastern, Gulf Coast and Chicago refiners. Small independent natural gasoline manufacturers feel that such a plan must be made effective soon if they are to remain in business. With 26-70 natural gasoline now generally selling for 1¼ cents and some sales being made as low as 1 cent, the seriousness of their condition is apparent. Their alternative is to manufacture a 10-pound motor fuel and enter into direct competition with refiners. This movement has gained progress and the jobbers in the northern states have become more receptive to the new product but its manufacture calls for weathering off about 50 per cent of the original volume, which in turn is costly and generally wasteful in these smaller plants.

As the refinery gasoline buying program gets under way in the East Texas Field, estimated purchases of gasoline may easily mount to 2,500 cars in July. Some of the gasoline referred to is in tanks on the Gulf Coast and this may account for the relatively high estimate of distress material.

The absorption of a much smaller quantity of natural would be necessary to guarantee the orderly distribution of Mid-Continent natural gasoline and possibly as little as 300 cars taken by refiners immediately plus the absorption of about 20 cars of daily production would set the natural market in order and keep it in order indefinitely.

Advocates of such a plan call attention to the need for control of production as well and some such plan may be originated as a part of the major program for expanding the refinery use of natural. The preliminary discussions have been held and the finished outline will probably be presented to the Planning and Coordination Committee within another week.

### PROPOSE MICHIGAN PLANT

MUSKEGON, Mich., July 2.—Plans are under way for erection of a new natural gasoline extraction plant in Section 17, Porter Township, Midland County, in the heart of the largest producing oil field in Michigan, it was revealed by James C. Graves and associates, of Saginaw, who are back of the project.

Contract for the sale of 10,000,000 feet daily of dry gas residue from the plant has been assured, it was stated by Mr. Graves, who is now completing arrangements to purchase sufficient gas in the field. The new plant will be the largest in Michigan and will employ a slightly different principle than that used in the Greendale Township, Midland County, plant of O. H. Grimes, of Tulsa, recently erected, as the Porter gas contains more sulphur. Construction will be started as soon as all contracts are closed.

## Oil Well Employes Enjoy Canadohta Lake Picnic

OIL CITY, Pa., June 30.—The joint picnic arranged by the management and the employes representation plan of the Oil Well Supply Co. held at Canadohta Lake, was attended by upwards of 1,000 persons. Ideal weather combined with the

D. M. HOCHSWENDER
General Chairman

ideal surroundings to make the picnic one of the most enjoyable held in many years.

A program of contests and games that offered everyone unusual diversion provided entertainment through the day. Early in the evening the throng enjoyed a picnic dinner.

A. R. Zelt presented the prizes and a program of community singing, led by the Oil Well Quartet was enjoyed by the diners.

The dance that followed the dinner, from 6:30 to 9:30, began with a grand march led by Mr. and Mrs. Zelt, during which paper hats and novelties were distributed. Miss Evelyn Scott led the orchestra during the grand march. The waltz prize was won by Mr. and Mrs. Alec Cameron.

Many of those who did not participate in the sports program took advantage of Canadohta's cool waters for a dip. The children were taken for rides around the lake in a speed boat.

Two of the features of the sports program were the tug o' war and the mushball game. Teams from the forge shop and the foundry competed in the tug o' war. The forge men won and will receive a suitably engraved cup that will be put on display in the shop. The cup will be contested for each year. In the mushball game, the Oil Well All-Stars defeated the Oil Well league team, 8 to 4.

### DRILLING SUBCOMMITTEE

WASHINGTON, D. C., July 2.—The following names have been added to the drilling practices subcommittee, state of Illinois, Region No. 3:

For the drillers: F. B. Barnes, Wilson Drilling Co., Robinson, Ill.; Charles Foreman, Foreman & Miller, Allendale, Ill.; J. S. Young, Jr., contractor, Lawrenceville, Ill. For the producers: George Baldwin, Snowden & McSweeney, Bridgeport, Ill.; E. B. Cochran, Hamilton Production Co., Lawrenceville, Ill.; Alex McCandless, producer, Robinson, Ill.

# PIPE LINE CONSTRUCTION

### CUT BANK LINE

Extensive pipe line construction is getting under way in northern Montana as a result of the development of the new Cut Bank Field in Glacier County and the expansion of refining and marketing operations in several western provinces of Canada. As already announced the International Pipe Line Co., a subsidiary of the International Refining Co., which operates a refinery at Sunburst and which is a subsidiary of the Texas Co., is constructing a 28-mile 6-inch line from the Cut Bank Field to Sunburst.

The Toronto Pipe Line Co., subsidiary of the British-American Oil Co., Ltd., of Toronto, has incorporated in Montana, and has let the contract for a 6-inch line from the Cut Bank Field to Coutts, Canada, and a complete 4-inch gathering system in the field. This line will start in Section 2-34-6w. The International Pipe Line Co.'s line starts in Section 11-34-6w.

Announcement was mode by J. W. Johnson, of Shelby, Mont., state manager for the Toronto Pipe Line Co. and the British-American Oil Production Co., that the contract had been let for the new Toronto pipe line. Both the Toronto Pipe Line Co. and the British-American Oil Production Co. are subsidiaries of the British-American Oil Co. of Toronto. Mr. Johnson's statement follows.

"Construction of a 30-mile oil pipe line from the Cut Bank district to Coutts, Alberta, will begin immediately. It is understood that the entire project will involve the expenditure of between $300,000 and $400,000. The contract for the main 6-inch line together with the telephone line along the system has been let to the construction firm of Ford, Bacon & Davis of New York City.

"The right of way for the main line has been cleared and work has already begun. A large crew of men will be employed and the project will be in full swing by the end of this week. A contract for the building of the rest of the project has not yet been let. This involves a 4-inch line crude oil gathering system which will blanket the entire Cut Bank Field. In addition, a tank farm and pump station will be erected on the Seeba lease on Section 20-34-6, about 7 miles north of Cut Bank.

"The Toronto Pipe project is scheduled to be completed by August 10, 1934. It will supply crude oil for the large British American refinery at Coutts and for a new plant which is being constructed at Moose Jaw, Saskatchewan."

The main tank farm and pumping station near the heart of the Cut Bank Field will include several 55,000-bbl. and 80,000-bbl. storage tanks. The main 6-inch line will run from this point to the British-American refinery at Coutts. In addition, a 4-inch gathering line with laterals to outlying leases will run south through the center of the field to a point about 8 miles south of Cut Bank, the present southern limit of production.

The British-American Oil Co. refinery at Coutts represents a reconstruction and extension of the former Northwest Stellarene refinery. It is a cracking plant with a daily capacity of 2,500 bbls. In addition, the British-American Oil Co. operates a 4,000-bbl. cracking plant in Moose Jaw, Saskatchewan, which is a reconstruction of a much smaller plant taken over last year from Sterling Oil Refineries, Ltd.

The pipe line project represents a further strengthening by the British-American company of its position in western Canada. It first commenced operations in Toronto about 30 years ago, and more recently built a large modern plant at Montreal East. The company markets petroleum products throughout Canada with the exception of the western half of British Columbia.

Imperial Oil, Ltd., and the British-American Oil Co. are at present purchasing a major portion of the Cut Bank crude output. Of the May production of 76,946 bbls., the British-American Oil Co. took more than 33,000 bbls. and Imperial Oil, Ltd., more than 27,000 bbls.

A possible pipe line direct to the Moose Jaw refinery has been suggested in connection with a recently proposed increase in the rail freight rates on crude oil, but it is understood present plans contemplate shipments of crude from Coutts to Moose Jaw by tank car.

### DEAN FLOWERS HONORED

Dean W. Flowers, new vice president and general manager of the Muskegon Gas and American Michigan Pipe companies, subsidiaries of the American

DEAN W. FLOWERS

Light & Traction Co., was honored Monday evening, July 2, at a dinner attended by about 40 leaders of Greater Muskegon.

Mr. Flowers, former manager of the gas and electric departments of the San Antonio, Tex., Public Service Corp., succeeds E. J. Hammer, acting manager, and E. H. Kifer, former general manager, who resigned March 1 to return to San Antonio. Mr. Kifer formerly was general manager of the San Antonio subsidiary of American Light & Traction. Mr. Flowers has had 29 years' experience with operating units of A.L.&T. He is a graduate of Ohio State and formerly was with Binghamton Gas Works, New York; Consolidated Gas Co., Long Branch, N. J., and St. Paul, Minn., Gas Light Co.

### NEW MICHIGAN PERMIT

MUSKEGON, Mich., July 2.—Michigan Public Utilities Commission has issued a formal order approving applications of two affiliated Muskegon subsidiaries of the American Light and Traction Co., the American Michigan Pipe Line and Muskegon Gas companies, to lay a 55-mile line from the Austin Township, Mecosta County, gas field, to Muskegon, and to place in effect a schedule of rates submitted at a hearing in Lansing. The commission issued a new certificate of public convenience and necessity to the pipe line unit similar to one issued last February by the previous commission but held up for two months on renewal pending approval of proposed rates to domestic consumers.

Delay in developing a sufficient supply of natural gas in the Austin Township Field caused the original permit to lapse. Construction of the line at an estimated cost of $500,000 will be started as soon as a minimum of 16,000,000,000 feet of reserves are developed by Taggart Bros., Inc., of Big Rapids, with whom the Muskegon pipe line concern has an exclusive contract.

Taggart Brothers have reached a depth of about 600 feet in their No. 7 well on the J. M. McKeough lease, C SW Section 2-14-9w, Austin Township, about a mile east of proved production. Six present producers in the Mecosta Field, five of which were drilled by Taggarts, have an open flow capacity of 85,000,000 feet a day, including the state's largest gasser, a 34,000,000-foot well. It is estimated reserves of 10,000,000,000 feet already are assured from the Michigan pay sands at about 1,400 to 1,500 feet. A new rotary rig was moved in about two weeks ago to drill No. 7, now expected to be completed within a week or 10 days.

E. L. Fischer, of Davenport, Iowa, United Light & Power Co. engineer, will have charge of laying the new line, right of way for which has been completely purchased or optioned under W. V. Sivley, also of Iowa, during recent weeks. The line will be 10 and 8-inch, respectively, extending along the Muskegon river valley, the shortest route from the Mecosta Field near Big Rapids to Muskegon.

It is estimated by Mr. Fischer about 55 per cent as much natural gas will be used as present artificial gas consumption. Present gas has a B.t.u. content of 534 compared with 1,050 for the natural fuel. About $40,000 will be spent to make the changeover, or $3.50 per customer.

### COLORADO PIPE LINE

DENVER, Colo., July 2.—The Stanolind Oil & Gas Co. executives have authorized the laying of a 4 and 6-inch pipe line from their wells on Iles Dome, Moffat County, Colorado, to the Denver & Rio Grande Railroad at Rifle, Colo. This line will be about 61 miles long and the survey and right of way work is now being carried on in the field. Pipe has been purchased and the line when laid will be welded and built in part of 4 and part of 6-inch size to accommodate conditions encountered along the route.

The present plans propose that the line be laid along the county road from the Iles Field to Rifle past the Shaver ranch and Axial Basin post office. A booster station will be installed at Iles Dome Field to pump the oil over Nine-Mile Hill near the field and a second station at Meeker would be necessary during the winter months to move the oil over the White River divide between Meeker and Rifle. It is estimated that the oil will flow during the summer months from the top of Nine-Mile Hill to the terminal at Rifle, but during cold weather the thicker oil may need pumping.

The capacity of the line is estimated at from 4,000 to 5,000 bbls. daily and the pressure in the lines from 400 to 500 pounds per square inch.

The pipe line is being laid to reduce the rail haul from the Iles oil field to Salt Lake City. Until the completion of the Dotsero cutoff last month oil from Moffat County fields had to be hauled to Denver in the eastern part of the State before it could be started west. With the pipe line delivering oil to the loading racks at Rifle on the Denver & Rio Grande Railroad there will be a shorter rail haul to Salt Lake City, one of the principal outlets for this crude.

### CAYUGA GATHERING LINE

Apex Construction Co., Houston, Tex., recently completed the work of reclaiming, cleaning and hauling approximately 7 miles of 4 and 6-inch diameter screw and victrolic coupled pipe from a line laid in Gregg and Rusk Counties, East Texas, for the Tidal Pipe Line Co. This pipe is to be relaid as gathering lines in the Cayuga Field, Anderson County, Texas, for the Tidal Pipe Line Co.

### VERA CRUZ LINE

Huasteca Petroleum Co. (Standard Oil Co. of New Jersey) has commenced construction of a petroleum pipe line from pumping stations in its Cerro Azul, Vera Cruz state, fields to its terminal at Mata Redonda, near Tampico The line will cost about 3,600,000 pesos.

July 5,

# No Increase in the Cummins Well, Ector County; Drought Hinders Wichita Falls Area Drilling

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 2.—The discovery well of C. J. Davidson on the Cummins ranch in the northwestern part of Ector County, started drilling during the week after being shut down for several days. Late in the week it had reached 4,383 feet without getting an increase in oil or gas. It will probably be drilled until more pay or water is encountered. Unless it gets an increase in oil it will be shot and then treated with acid. After being shut in for several days it made one 15-bbl. head when opened, leaving 3,500 feet of oil in the hole. The main pay was logged from 4,295-4,302 feet, with an increase from 4,326 to 4,333 feet. It is located in Section 10, Block 45, Township 1n, T.&P. Survey.

Five miles southeast, Landreth Production Co.'s No. 1 Scarbauer, in Section 20, Block 44, Township 1n, T.&P. Survey, had base of the salt at 2,540 feet and topped the Yates sand at 2,662 feet. A small show of gas was made from 2,652-62 feet and late in the week it was drilling below 2,675 feet. This is the most important test drilling in the county due to its location. It is 2½ miles northwest of an old dry hole drilled by the Penn and Devonian Oil companies which encountered several showings of oil.

In the same county, Harper and York's No. 1 Bates, 2 miles southwest of Broderick and Calvert's No. 1 E. F. Cowden discovery well, and in Section 38, Block 44, Township 2s, T.&P. Survey, is drilling below 3,600 feet in brown lime stringers encountered around 2,590-92 feet, making the test correlate about even with the discovery well. The area around the discovery well is defined by dry holes on the west, northwest, north, northeast and to the southeast by a gas well. If a pool of major importance is to be opened it will have to run either south or southeast.

### Schleicher County

J. M. Cooper and others' No. 1 Page, an interesting Ordovician test in Schleicher County, is drilling below 5,565 feet in lime with no increase in oil or gas. It is showing an estimated 4,000,000 feet of gas and a small amount of high gravity oil. It is reported the operators are planning to use acid from around 5,400 to 5,534 feet. If this fails to develop commercial production, drilling will continue to the Ordovician. Location is in Section 40, Block L, G.H.&S.A. Survey.

### Runnels County

The McMillan Pool, Runnels County, got the best well ever completed in the field during the week, when Art Tucker's No. 4 McMillan topped the pay sand at 2,500 feet and drilled 5 feet in. It made 33 bbls. the first 30 minutes and was then pinched in to 8 bbls. per hour. It is in Subdivision No. 22 in the Domingo Diaz Survey. The Marathon Oil Co. of Fort Worth has contracted for 1,000 bbls. of the high gravity oil daily and it is to be shipped by tank cars from the field. The oil is being supplied by the Agnew Oil Co., Golden Petroleum Co. and Art Tucker. Previously the oil had been shipped to refineries in Canada and is bringing a premium of 15 cents per barrel.

### Ordovician Tests

Humble Oil & Refining Co.'s No. 1 White and Baker is being abandoned at a total depth of 9,811 feet after encountering sulphur water in the Ellenburger lime from 9,690-9,768 feet. It is in Section 44, Block Z, T.C. Survey, Pecos County. The company's location for another Ordovician test in Schleicher County which was reported last week, has been changed. Instead of being in Section 46, Block M, G.H.&S.A. Survey on the T. C. Meador land it was changed to the Ike Hong ranch, in Section 38, Block M, G.H.&S.A. Survey. Gulf Production Co.'s No. 103 McElroy, an Ordovician test in Upton County, is drilling below 10,523 feet in chert, showing no change. It is located in Section 197, Block F, C.C.S.D. & R.G.N.G. Survey.

In the McMillan Pool, Runnels County, Prairie Oil & Gas Co.'s No. 1 T. B. Wade struck salt water from 2,508-11 feet and was abandoned. It is north of production and is located in subdivision No. 10, Norvell Travis Survey, defining the pool on the north.

### Andrews County

In Andrews County, Humble Oil & Refining Co.'s No. 1 R. M. Means, a wildcat 12 miles northeast of the Deep Rock Pool in Section 2, Block 35-A, P.S.L. Survey, is mixing heavy mud, preparing to drill deeper. Total depth is 4,083 feet. The company has made a location for another test about 3 miles south of the Deep Rock Pool and 3 miles north of the Ford area. It is on the Walker land and will be carried as No. 1-B.

### WICHITA FALLS DISTRICT

Lack of water continues to curtail drilling activities in the Wichita Falls district. There were only 44 locations staked this week and only 28 tests completed, the smallest reports for six or eight months.

Three Ordovician tests are to be put down in Callahan County. One is to be drilled within 1½ to 2 miles northeast of Baird, one-half way between Baird and Moran and the other due west of Moran about 6 miles. The largest block consists of 8,800 acres and is near Baird. H. H. Adams, geologist, detailed the areas and assembled the block.

The Ellenberger test of the Phillips Petroleum Co. on the W. T. Waggoner ranch, in Section 43, Block 4, H.&T.C. Survey, Wilbarger County, was a disappointment when plug was drilled out at 3,872 feet, showing water. The deep lime was topped at 3,870 feet.

Operators in some areas are overcoming lack of water by using small portable, gasoline powered rotaries. These rotaries are on trucks, or have drawworks easily moved on trucks, and need but a small amount of water for circulating. Core drill machines are also being used in drilling shallow tests.

The district had a daily production of 60,795 bbls. during the week, a small gain over the previous week.

### PANHANDLE DISTRICT

Ralph Osborne, developer of the small and comparatively new field several miles east of Shamrock in Wheeler County, has asked that this area be designated as a separate pool with a daily allowable of 1,500 bbls. There is no pipe line outlet, and Osborne contemplates building a small refinery if assured such an allowable.

Rawlings' No. 1 Plummer, in the NW SE Section 45, Block 24, H.&G.N. Survey, Wheeler County, 2½-mile eastern extension to the western producing area of Wheeler County, is reported showing for a producer from pay topped at 2,44[illegible] feet. It was said to be spraying oil, and if completed as a commercial producer will be important. It is 2½ miles due east of the Watchorn producer in Section 47 in the same block and survey.

Production in the district averaged 58,905 bbls. during the week, a drop of 1,590 bbls. under the past week.

On July 6 the Texas Drilling Practices Committee will hold a hearing at Pampa, in an effort to establish fair economic minimum cost of drilling wells in the Panhandle district. Operators will present data on the cost of drilling in the Lefors-Bowers-Finley area.

C. B. Williams, of Fort Worth, and George B. Cree, of Pampa, composing what is known as the Panhandle zone subcommittee, will be in charge of the hearing. Requests for establishing costs in other Panhandle fields will be accepted by the committee at that time.

## Wildcat Operations in West Texas

Week Ending July 2

**ANDREWS COUNTY**

| Company, well, farm name, section and block— | Remarks: |
|---|---|
| Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 35, Blk. A-43, P.S.L. Sur. | Fishing 4,493 ft. |
| Honolulu and Llano Oil Co.'s No. 1 J. E. Parker, 1,320 ft. from S line and 1,470 ft. from W line of Sec. 7, Blk. A-44, P.S.L. Sur. | Spudded and S.D. |
| Humble Oil & Ref. Co.'s No. 1 B. S. Walker, 660 ft. from E line and 660 ft. from S line of Sec. 6, Blk. A-43, P.S.L. Sur. | Location. |
| Humble Oil & Ref. Co.'s No. 1 R. M. Means, 660 ft. from N and 660 ft. from E of Sec. 2, Blk. 35-A, P.S.L. Sur. | Set csg.; T.D. 4,082 ft. |
| Humble Oil & Ref. Co.'s No. 1 Kuykendall, 1,980 ft. from S and E lines of Sec. 34, Blk. A-46, P.S.L. Sur. | Rig up to pump; T.D. 4,511 ft. |

**BORDEN COUNTY**

| | |
|---|---|
| Continental Oil Co.'s No. 1 Johnson, 660 ft. from S line and 660 ft. from E line of Sec. 34, Blk. 32, Twp. 4n, T.&P. Sur. | Underreaming 540 ft. |

**BREWSTER COUNTY**

| | |
|---|---|
| Joiner-McIntyre's No. 1, 853 ft. from S, 2,390 ft. from E of Sec. 31, Blk. 352, W. M. Mitchell Sur. | Drlg. 1,700 ft. |

**COKE COUNTY**

| | |
|---|---|
| Wm. Hooper's No. 1 Gaston, 340 ft. from S line and 654 ft. from W line of Joseph Sur. No. 11 | Drlg. 2,500 ft. |

**CRANE COUNTY**

| | |
|---|---|
| Brandon et al's No. 1 J. Cowden, 330 ft. from N and 330 ft. from W line of Sec. 13, Blk. X, C.C.S.D.& R.G.N.G. Sur. | Drlg. 1,950 ft. |
| Gulf Prod. Co.'s No. 1 E. M. Snodgrass, 1,320 ft. from N and 1,320 ft. from W line of Sec. 1, Blk. B-25, P.S.L. Sur. | Spudded. |
| Wahlenmaier Petroleum Corp.'s No. 1 W. P. Edwards, 330 ft. from N and 330 ft. from E of SW cor. of the NE of Sec. 12, Blk. B-23, P.S.L. Sur. | Testing; T.D. 3,720 ft. |

**CROCKETT COUNTY**

| | |
|---|---|
| J. D. Young's No. 1 Shannon, 330 ft. from W line, 330 ft. from N line of Sec. 36, Blk. 1, G.C.&S.F. Sur. | S.D. 2,635 ft. |

**CULBERSON COUNTY**

| | |
|---|---|
| Anderson-Pritchard Oil Corp.'s No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur. | Rig on ground. |
| Miller Bros.' No. 1 fee, 1,980 ft. from N and 660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur. | S.D. 1,062 ft. |

**DAWSON COUNTY**

| | |
|---|---|
| Ray Albaugh et al's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.&R.R. Sur. | Drlg. 2,381 ft. |

**ECTOR COUNTY**

| | |
|---|---|
| Atlantic Oil & Prod. Co.'s No. 3 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. | To straighten crooked hole; T.D. 1,180 ft. |
| Continental Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from S line and 1,980 ft. from W line of Sec. 30, Blk. A, P.S.L. Sur. | Drlg. new hole at 660 ft. |

(Continued on Page 60)

### COMPLETIONS IN WEST TEXAS

#### Ector County

Landreth Production Co.'s No. 1-A T. P. Land Trust, top pay 4,122 feet, total depth 4,297 feet, plugged back to 4,248 feet, initial production 808 bbls. after shot. Shell Petroleum Corp.'s No. 2 E. J. Jones, top pay 3,587 feet, initial production 280 bbls., total depth 3,689 feet. Stanolind Oil & Gas Co.'s No. 5 J. M. Cowden, total depth 4,400 feet, plugged back to 4,333 feet, top pay 4,160 feet, initial production 970 bbls.; No. 6 J. M. Cowden, top pay 4,138 feet, initial production 1,000 bbls. after shot, total depth 4,333 feet.

#### Glasscock County

Simms Petroleum Co.'s No. 2 W. P. Edwards, top pay 2,150 feet, initial production 263 bbls., total depth 2,270 feet.

#### Jones County

Campbell and others' No. 3 Herndon, show of oil 2,488-90 feet, initial production 25 bbls. oil and 25 bbls. of salt water, total depth 2,497 feet.

#### Reeves County

Grisham and Hunter's No. 1 fee, junked and abandoned, total depth 3,930 feet.

#### Runnels County

Golden Petroleum Co.'s No. 4 McMillan, location abandoned. Prairie Oil & Gas Co.'s No. 1 Wade, dry and abandoned, total depth 2,511 feet. Art Tucker's No. 5 R. M. McMillan, show of oil 2,495-2,505 feet, initial production 300 bbls., total depth 2,505 feet. Watts Brothers' No. 1 P. L. Brevard, show of oil 2,517-22 feet, initial production 300 bbls., total depth 2,523 feet.

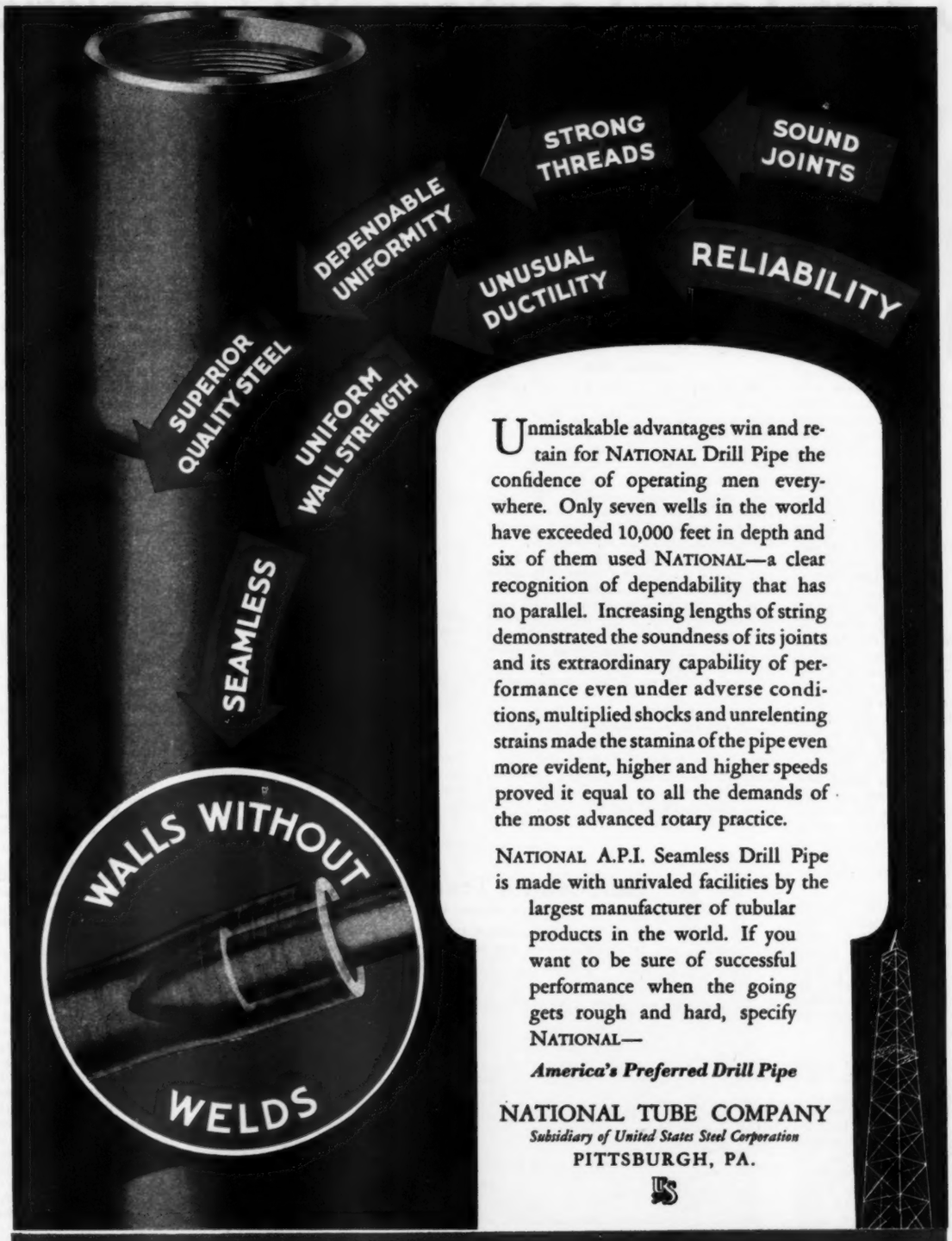
#### Ward County

C. C. Duffey and others' No. 1 S. S. Owen and others, gas at 2,070 feet, increase at 2,132 feet, initial production 10,000,000 feet of gas, total depth 2,132 feet. Buck Sturm and Simms Petroleum Co.'s No. 2 R. H. Gill, top pay 2,494 feet, initial production 260 bbls., total depth 3,060 feet. Tex-Mex Petroleum Co.'s No. 3 S. S. Owen, top pay 3,026-37 feet, initial production 566 bbls., total depth 3,040 feet.

#### Winkler County

Magnolia Petroleum Co.'s No. 5 Scarborough, top pay 2,843 feet, initial production 771 bbls., total depth 2,843 feet; No. 1 Scarborough, top pay 2,862 feet.

(Continued on Page 58)

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*Subsidiary of United States Steel Corporation*
PITTSBURGH, PA.

# NATIONAL A.P.I. SEAMLESS DRILL PIPE

# Cherokee County Well Proves Good Producer; 70 East Texas Locations, 89 Completions

By L. E. BREDBERG

DALLAS, Tex., July 2.—The new Cherokee County discovery of Wood, Young, Wolfe and others on the New Birmingham Development Co.'s lands in the Levi Jordan Survey, has come through a good producer after setting a whipstock and drilling through casing to redrill hole in an effort to eliminate the salt water formerly produced with the oil at total depth of 5,120 feet. Sand in the new hole was topped at 5,103 feet, the operators electing to take only 4 feet of sand for completion. However, since going to the trouble of redrilling the well is still showing b.s. and salt water.

On July 1 it was changed from tubing to casing, with a three-quarters inch choke on the latter. From 8 to 9 p. m. that day it made 45 bbls. of fluid of which 13 per cent was b.s. and salt water. During the 24 hours, ending at 7 a. m., July 2, it made 1,102 bbls.; during the last 12 hours it made 598 bbls. of fluid of which 540 bbls. was oil and the rest b.s. and salt water. It has produced a total of 3,370 bbls. up to 7 a. m. this morning, and although showing salt water has created a big lease and royalty play throughout the county, especially on a north and northeast trend. It has started the drilling and proposed drilling of other wildcats in the county, and will lead to the immediate drilling of two other offsets by the men who drilled in the discovery. These two tests are to be 600 feet north and 600 feet west, respectively, from the discovery, and will be carried as Nos. 2 and 3. A heavier rotary is being moved in to drill these tests. Gravity of the oil from the discovery well tested 39.8 degrees at 77 degrees temperature.

Leases and royalties are still bringing fair prices within a 10-mile radius of the discovery. Sinclair Prairie Oil Co. bid $126 per acre to the State for an oil and gas lease on 160 acres of State Hospital Land in the county. The land is in the G. W. Brashear Survey, several miles north of the well. The State is to put up 2,300 more acres for sale on July 21 in the same county.

A block of between 4,000 and 5,000 acres has been assembled and taken by the Rowan Drilling Co. and Rowan and Nichols Oil Co., of Fort Worth, who will probably drill a test later. The land is near Reklaw near a test formerly drilled by the Magnolia Petroleum Co. on the Summers farm. It topped the Woodbine sand at 4,305 feet and drilled to 4,339 feet. Elevation is 317 feet. Rowan and Nichols also drilled one to 4,377 feet near the Magnolia test. The area is on the east side of the county, about 8 or 9 miles northeast of Rusk.

### Test Southeast of Rusk

The test drilling a short distance southeast of Rusk by the C. & G. Oil Co. (Cranfill and Germany of Dallas), is down 4,800 feet in shale. It has not picked up the Austin chalk yet, but logged the Pecan Gap chalk at 3,884-4,250 feet. Elevation is 486 feet. It is approximately 7 miles northeast of the Rusk discovery and the only test drilling in the area. If it makes a producer it will practically substantiate the theory of a shoreline condition and will cause an added spurt in lease and royalty buying.

The test now drilling about 10 miles east of the discovery, on the Jess Bradford farm in the John Laprelle Survey, is also interesting. This test was formerly drilled to a total depth of 3,100 feet where it stood for a long time prior to the change in ownership. It is now drilling below 2,500 feet on new hole. Some are of the opinion the Rusk discovery is on the extreme west edge of a structure or a shore line, and that the field will extend to the east and northeast, consequently feel the Bradford test has a chance of production.

### Cayuga Area

Barnsdall Oil Co.'s No. 1 Loper, in the James Wilson Survey, southeast of the discovery well in the Cayuga Pool, made salt water at 4,086 feet and looked sure to be a defining well on that edge of the pool, instead of on the southwest, as reported last week. It has been cemented back to 2,440 feet to redrill, the operators feeling the first was a crooked hole and that redrilling and drilling a straight hole may result in an oil producer.

Roeser & Pendleton, Inc.'s No. 1 Bowyer, in the E. Ritter Survey, 1½ miles northeast of the discovery, still looks good for only a gasser, defining the pool on the northwest. Total depth is 4,082 feet. When formerly tested at 4,070 feet it showed a daily capacity of between 30,000,000 and 40,000,000 feet of gas, with no oil. The gas is now making some distillate.

Tide Water Oil Co. and Texas Seaboard Oil Co. have made an interesting location on the J. A. Campbell 243-acre tract in the James Wilson Survey, about 1 mile due south of the nearest producer. They have also made location about 2 miles due north of the discovery.

Another interesting test is proposed about 4 miles west and a little south of the discovery, in the G. B. Bonham Survey, across the river from the pool and over in Freestone County.

Three wells, owned by the Tide Water Oil Co. and Texas Seaboard Oil Co. were completed during the week.

*Gordon Griffin, recently appointed chief engineer of the Texas Railroad Commission*

### Wildcats

Wheelock & Collins, Magnolia Petroleum Co. and Humble Oil & Refining Co.'s No. 1 Cerf, in the James Smith Survey No. 726, scheduled to be drilled to the Trinity sand in quest of production from that deep horizon below the Woodbine, is down 4,200 feet, reported having topped the Pecan Gap chalk at 2,865 feet. It is on the west flank of the Corsicana-Powell Field in Navarro County, and will be closely watched as it nears the Trinity sand zone.

J. E. Schultz and others have moved in derrick on the Roy Ward farm, Harrison York Survey, on a 3,000-acre block about 5 miles west of Mexia, and 2 miles north of the Nigger Creek Field in Limestone County. It is on the Balcones fault trend and location was staked on both geological and geophysical data.

### EAST TEXAS FIELD

The most important feature in the East Texas Field this week was the report that Rhoads Drilling Co. had sold a controlling interest to the American Liberty Oil Co. (Golding and Murchison of Dallas). "There was no cash consideration paid to the stockholders for the transfer of this stock, but the consideration will inure to the benefit of the State rather than to the stockholders themselves," according to a statement issued by Dudley Golding of the American Liberty Oil Co. and F. M. Corzelius, president of the other company.

The deal involves properties in the Sabine River bed in Gregg County, including 64 producing wells, the producing company now paying one-fourth plus a one-sixteenth royalty to make payment of $5,000 per well. There are eight additional locations on the river that have to be drilled to protect the interest of the State. The tests will be started immediately with three rigs.

There are slightly over 200 acres in the several tracts in the river bed, the producing wells having a daily allowable of 2,560 bbls. at present. The property is owned by the State, which leased it to the Rhoads Drilling Co. as the highest bidder. The International Pipe Line Co., an affilated company, gathers the oil, which is sold to the Humble Oil & Refining Co. at the posted price plus 5 cents a barrel gathering charge.

Another order has been issued in regard to reclaiming plants. All oil run to such plants is now charged back against the daily allowable of the well from which it was produced. No oil is to be picked up without a specific order from the commission. Before such an order is issued the operator must state the source of the production, so it may be charged against the lease or pipe line from which it was taken. This may do away with much oil that has been allowed to be transported or handled by a refinery as reclaimed oil, but may have been taken from a slush pit, ravine, creek bed, or been tabulated as "tank bottoms." However, much of the so-called "reclaimed" oil has been taken directly from the wells, much oil being used to flush out tanks. The new order is designed to stop this practice, but trucks running at night will no doubt continue to pick up large quantities of "reclaimed" oil.

### Transportation Report

During the week reports from the field showed a daily average of 498,625 bbls. being transported by the major lines. There are 33 refineries shut down and 45 operating, those operating handling 60,-200 bbls. per day. Tank car shipments averaged 204 cars per day. Daily average distribution ran 559,000 bbls., daily average production running 507,700 bbls.

There were only 70 locations staked this week, the order affecting the staking of locations as exceptions to the spacing rule resulting in a curtailing of drilling permits. There were 89 wells completed. The commission is to appoint an extra man to hear applications for permits to drill exceptions to the spacing rules. J. D.

## East Central Texas Wildcats

**Week Ending July 2**

**ANDERSON COUNTY**

| Company, well, farm name, section and block— | Remarks |
|---|---|
| Barnsdall Oil Co.'s No. 1 Loper, 467 ft. from N and W lines of 40-ac. tract, 1 mile SW of Cayuga, James Wilson Sur. | Plugged back to 2,300 ft. from 4,086 ft. after testing salt wtr. |
| Roeser and Pendleton's No. 1 Virginia Boyer, 467 ft. from E line and 1,347 ft. from S line of 200-ac. tract, Everett Ritter Sur. | Set csg., T.D. 4,081 ft. |
| Stanolind Oil & Gas Co.'s No. 1 Loper, 483 ft. S and 466 ft. E of NW cor. of 40-acre tract, James Wilson Sur. | Location. |
| Sun Oil Co.'s No. 1 Erskine, 200 ft. from S line of survey and 3,000 ft. from Trinity river, Samuel C. Box Sur., SW part of county | Location. |
| Texas Seaboard Oil Co.'s No. 3 Edens, 467 ft. from N and E lines of tract, Samuel Snyder Sur. | Drlg. 1,148 ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 J. A. Campbell, 1,260 ft. from N line and 440 ft. from W line of 243-ac. tract, James Wilson Sur. | Location. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 Royal and Cone, 467 ft. from S line and 1,533 ft. from E line of 92-ac. tract, Thomas Bristow Sur. | Location. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Edens, 2,871 ft. from N line and 467 ft. from E line of tract, Samuel Edmondson Sur. | Set csg. 650 ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Robertson, 633 ft. from W line and 407 ft. from N line of lease, Samuel Snider Sur. | Location. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1-B Virginia Wills (Boyer), 467 ft. from S and E lines of lease, M. H. John Sur. | Drlg. 3,090 ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1-C N. N. Wills, 477 ft. from S line and 467 feet from W line of tract, Thomas Bristow Sur. | Location. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Rampy, 467 ft. from N and W lines of lease, James Wilson Sur. | Waiting on cement to set; T.D. 4,078 ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 S. F. Robertson, 470 ft. from N line and 1,566 ft. from W line of 50.4-ac. tract, Samuel Edmondson Sur. | Waiting on cmt. to set; T.D. 4,085 ft. |
| Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 4 Wills, 470 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Hill and Hill's No. 1 Tubbs, Samuel Edmondson Sur. | Waiting on gauge; T.D. 4,093 ft |

(Continued on Page 59)

Copeland, Jr., formerly stationed at Kilgore, has been named as the extra examiner.

On July 17 the Railroad Commission is to hold a hearing to determine whether the area north of the main body of the field, over in Upshur County, should be designated as a separate field and allowed a separate quota. The Eastern Texas Petroleum Co., organized and headed by Freeman W. Burford, has asked for such a hearing. The company has three producers in the area.

### Van Field

The Travis County District Court has issued an injunction to prevent a railroad from moving several tank cars of crude produced by an extension well northeast of the Van Field, Van Zandt County. The well was drilled by J. D. Wrather, producer and refiner in the East Texas Field. The well was allowed to overproduce and the oil run into tank cars standing on a siding near the field. He has made location for another well offsetting his first producer, and the only producer in or near the field, producing from the Woodbine sand, not owned by the major producers participating in the producing of the field.

## COMPLETIONS IN EAST TEXAS

### Anderson County—Cayuga Pool

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 L. A. Rampy, top sand 4,057 feet, initial production 115 bbls. in 24 hours through choke, total depth 4,078 feet, top Pecan Gap 2,268 feet, base 2,314 feet, top Austin chalk 3,160 feet, base 3,531 feet, top Woodbine sand 3,827 feet; No. 4-A N. N. Wills, top oil sand 4,077 feet, initial production 15 bbls. per hour through one-quarter inch tubing choke, total depth 4,093 feet, top Pecan Gap 2,200, feet, base 2,388 feet, top Austin chalk 3,170 feet, base 3,591 feet, top sand 3,888 feet, top Woodbine sand 3,888 feet. Tide Water Oil Co.'s No. 5-A N. N. Wills, top oil sand 4,070 feet, initial production 15 bbls. per hour through one-quarter inch tubing choke, total depth 4,081 feet, top Pecan Gap 2,200 feet, base 2,550 feet, top Austin chalk 3,197 feet, base 3,580 feet, top Woodbine sand 3,883 feet.

### Franklin County

Magnolia Petroleum Co.'s No. 1 A. P. Dupree, dry and abandoned, total depth 3,777 feet, top Pecan Gap 1,484 feet, top Woodbine sand 3,270 feet, showed salt water from 3,590-3,648 feet; W. D. Talliferro Survey.

### Henderson County

Gulf Production Co.'s No. 1 H. T. Gillam, top Pecan Gap 3,206 feet, base 3,390 feet, top Austin chalk 4,332 feet, base 4,573 feet, dry and abandoned, total depth 4,885 feet; J. L. Scott Survey.

## EAST TEXAS FIELD

### North Gregg County

Alemeda Petroleum Co.'s No. 2-B R. P. Doby, top sand 3,729 feet, initial production 32 bbls. in one-half hour through open tubing, total depth 3,749 feet. Ambrose's No. 3-B George Jones, top sand 3,497 feet, initial production 100 bbls. per hour through open tubing, total depth 3,602 feet. Atlantic Oil Producing Co.'s No. 9 Anderson, top sand 3,450 feet, initial production 15 bbls. in one-half hour through open tubing, total depth 3,530 feet; No. 62 Judge, top sand 3,498 feet, initial production 54 bbls. in one-half hour through open tubing, total depth 3,530 feet. Dyke Oil Co.'s No. 8 Christian, top sand 3,611 feet, initial production 100 bbls. per hour through open tubing, total depth 3,630 feet. Empire Gas & Fuel Co.'s No. 12 Akin, top sand 3,586 feet, initial production 100 bbls. per hour through open tubing, total depth 3,588 feet.

Fain and McGaha's No. 5 Rosa Corbin, top sand 3,520 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,578 feet. Faith Oil Co.'s No. 5 D. F. Wineker, top sand 3,665 feet, initial production 65 bbls. in 70 minutes through open tubing, total depth 3,688 feet. Gulf Production Co.'s No. 7 A. Neeley, top sand 3,495 feet, initial production 80 bbls. per hour through open tubing, total depth 3,525 feet. Humble Oil & Refining Co.'s No. 17 Tom Armstrong, top sand 3,556 feet, initial production 90 bbls. per hour through open tubing, total depth 3,608 feet; No. 8 E. W. Clements, top sand 3,528 feet, initial production 109 bbls. per hour through open tubing, total depth 3,594 feet; No. 5-B D. Johnson, top sand 3,587 feet, initial production 93 bbls. per hour through open tubing, total depth 3,611 feet. Iowa Payne Oil Co.'s No. 6 York, top sand 3,575 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,587 feet. Lechner and Hubbard's No. 4-A William Harley, top sand 3,550 feet, initial production 45 bbls. in one-half hour through open tubing, total depth 3,556 feet. Joe Long Drilling Co.'s No. 2-C W. W. Owens, top sand 3,631 feet, initial production 5 bbls. per hour pumping, total depth 3,670 feet.

Magnolia Petroleum Co.'s No. 2 W. L. Fuller, top sand 3,648 feet, initial production 60 bbls. per hour through open tubing, total depth 3,705 feet; No. 8 I. Zeigler, top sand 3,470 feet, initial production 92 bbls. per hour through open tubing, total depth 3,492 feet. Shelby Oil & Gas Co.'s No. 9-D Snavely, top sand 3,590 feet, initial production 32 bbls. in one-half hour through open tubing, total depth 3,600 feet. Shell Petroleum Corp.'s No. 17 G. W. Richey, top sand 3,523 feet, initial production 45 bbls. in one-half hour through open tubing, total depth 3,574 feet. Standard of Kansas' No. 3 J. W. Fuller, top sand 3,629 feet, initial production 50 bbls. per hour through open tubing, total depth 3,665 feet. Barnsdall Oil Co.'s No. 16 McGrede, top sand 3,615 feet, initial production 75 bbls. in one-quarter hour through open tubing, total depth 3,645 feet.

### South Gregg County

Big Four Oil Co.'s No. 4 Adkins, top sand 3,705 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,709 feet. Herman Brown's No. 3-A Southward, top sand 3,542 feet, initial production 78 bbls. per hour through open tubing, total depth 3,556 feet. Everts Drilling Co.'s No. 3 Muckelroy, top sand 3,554 feet, initial production 40 bbls. in one-half hour through open tubing, total depth 3,577 feet. Gulf Production Co.'s No. 19 Alexander, top sand 3,522 feet, initial production 73 bbls. per hour through open tubing, total depth 3,548 feet; No. 57 S. Helburn, top sand 3,569 feet, initial production 85 bbls. per hour through open tubing, total depth 3,593 feet. Invincible Oil Co.'s No. 20 Weiss and Elder, top sand 3,524 feet, initial production 150 bbls., total depth 3,540 feet. Magnolia Petroleum Co.'s No. 23 Radford, top sand 3,643 feet, initial production 104 bbls. per hour through open tubing, total depth 3,650 feet. Salmon Oil Co.'s No. 5 L. Martin, top sand 3,688 feet, initial production 100 bbls. per hour through open tubing, total depth 3,690 feet.

Shell Petroleum Corp.'s No. 9 Jobe, top sand 3,501 feet, initial production 40 bbls. in one-half hour through open tubing, total depth 3,568 feet; No. 11 Willoughby, top sand 3,537 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,608 feet. Texas Co.'s No. 9 W. Baxter, top sand 3,665 feet, initial production 43 bbls. in 40 minutes through open tubing, total depth 3,691 feet. M. K. Towns' No. 2-A Givens, top sand 3,615 feet, initial production 30 bbls. per hour through open tubing, total depth 3,625 feet. Turner-Gandy's No. 2 Benson, top sand 3,622 feet, initial production 100 bbls. per hour through open tubing, total depth 3,627 feet.

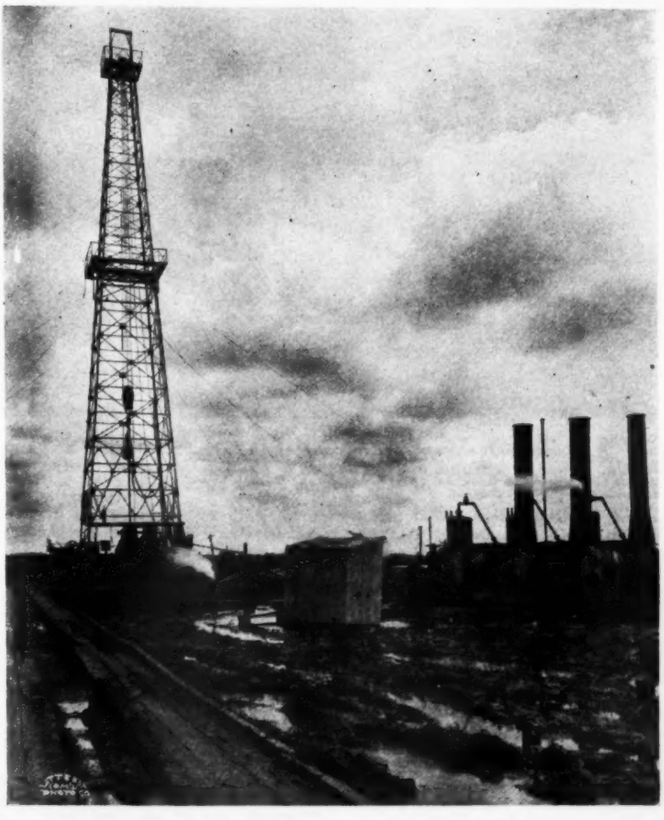
### North Rusk County

Ben G. Barnett's No. 4 I.&G.N.R.R., top sand 3,793 feet, initial production 75 bbls. per hour through open tubing, total depth 3,794 feet. DeArman and McMillan's No. 7 Robertson, top sand 3,545 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,684 feet. Everett Drilling Co.'s No. 2 Beasley, top sand 3,830 feet, initial production 30 bbls. per hour through open tubing, total depth 3,837 feet. Gulf Production Co.'s No. 15 Florence, top sand 3,670 feet, initial production 50 bbls. per hour through three-quarters inch tubing choke, total depth 3,677 feet; No. 12 M. E. Peterson, top sand 3,605 feet, initial production 60 bbls. per hour through open tubing, total depth 3,635 feet; No. 11 Sexton, top sand 3,664 feet, initial production 63 bbls. per hour through three-quarters inch tubing choke, total depth 3,669 feet. Houston Production Co.'s No. 3 Brightwell, top sand 3,588 feet, initial production 19 bbls. in 10 minutes through open tubing, total depth 3,597 feet. Humble Oil & Refining Co.'s No. 124 L. D. Crim, top sand 3,660 feet, initial production 82 bbls. per hour through open tubing, total depth 3,670 feet. C. M. Massingale's No. 2 Mayfield, top sand 3,628 feet, initial production 12 bbls., total depth 3,680 feet. Max Rubin's No. 1 Horton, top sand 3,490 feet, initial production 78 bbls. in 6½ hours' swabbing, total depth 3,550 feet. Sinclair Prairie Oil Co.'s No. 7-B Kennedy, top sand 3,702 feet, initial production 25 bbls. in one-half hour through open tubing, total depth 3,710 feet. Tide Water Oil Co.'s No. 14 Leverett, top sand 3,670 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,700 feet.

### South Rusk County

R. B. Bryant's No. 3 Redwine, top sand 3,515 feet, initial production 20 bbls. in two hours' pumping, total depth 3,581 feet. Combined Oil Co.'s No. 24 Eaton, top sand 3,730 feet, initial production 38 bbls. in one-quarter hour through open tubing, total depth 3,748 feet. J. M. Davenport's No. 1-A Bradford, top sand 3,555 feet, initial production 12 bbls. in 50 minutes through open tubing, total depth 3,620 feet. Haynes Drilling Co.'s No. 8 J. T. Brown, top sand 3,657 feet, initial production 37 bbls. per hour through open tubing, total depth 3,700 feet. Humble Oil & Refining Co.'s No. 8 First State Bank, top sand 3,694 feet, initial production 70 bbls. per hour through open tubing, total depth 3,710 feet; No. 43-A Kangerga, top sand 3,663 feet, initial production 69 bbls. per hour through open tubing, total depth 3,708 feet; No. 37-A Silvey, top sand 3,660 feet, initial production 80 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,730 feet; No. 24 Turner, top sand 3,674 feet, initial production 60 bbs. per hour through eleven-sixteenths inch choke, total depth 3,758 feet; No. 12-A V. Turner, top sand 3,719 feet, initial production 75 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,759 feet; No. 5 Wooley, top sand 3,633 feet, initial production 106 bbls. per hour through open tubing, total depth 3,683 feet. Hunt Production Co.'s No. 11-B Bradford, top sand 3,570 feet, initial production 20 bbls. in 71 minutes pumping, total depth 3,664 feet. McCullough Oil Co.'s No. 1 Thompson, top sand 3,771 feet, initial

## The First 136-Foot Derrick in the Gulf Coast



The Pure Oil Co. has recently erected at its No. 2 Stewart well at Louise, Tex., the first 136-foot derrick ever used in the Gulf Coast. The usual derrick chosen in this district for deep-well operations up to this time has been the standard 122-foot A.P.I. derrick. This innovation may in time influence the selection of derrick equipment for deep-well operations in the Gulf Coast and neighboring districts, as the taller derrick appears to have many advantages.

No. 2 Stewart was started about February 20, 1934. It is now drilling at 7,600 feet. At 6,500 feet 9⅝-inch Grade "D" 44.3-pound seamless casing was set. To a depth of 4,514 feet 6-inch, 22-pound, 30-foot drill pipe was used, below which point 4-inch, 16-pound drill pipe was used.

The drilling contractors, Smith & McDannald are using the following equipment at this well: Ideco A.P.I., 136-foot derrick, capacity 537,000 pounds; Ideco Super-Duty Jackshaft Drawworks; Ideco Type "LR" 5-sheave crown block; Ideco 72-inch, 5-sheave streamline traveling block; Ideco 27½-inch Oilbath rotary; Union Tool 12x12 engine; Gray 6-inch swivel; Union Tool 8-inch square hook; 1⅛-inch wire line.

production 30 bbls. in one-half hour through open tubing, total depth 3,810 feet. Martin and others' No. 1 Thrash, top sand 3,697 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,768 feet. Miller Production Co.'s No. 10 Bradford, top sand 3,520 feet, initial production 25 bbls. in one-half hour through open tubing, total depth 3,635 feet.

Octo Oil Co.'s No. 3-B E. B. Alford, top sand 3,655 feet, initial production 20 bbls. per hour through open tubing, total depth 3,695 feet. Olsen Brothers' No. 12 J. S. Powers, top sand 3,670 feet, initial production 50 bbls. in one-quarter hour through open tubing, total depth 3,619 feet. Pansy Oil Co.'s No. 4 Frederick, top sand 3,560 feet, initial production 15 bbls. per hour through open tubing, total depth 3,650 feet. Rogers and others' No. 7 Maxwell, top sand 3,726 feet, initial production 75 bbls. per hour through open tubing, total depth 3,756 feet. Saco Oil Co.'s No. 2-B E. B. Alford, top sand 3,620 feet, initial production 20 bbls. in 55 minutes swabbing, total depth 3,714 feet. Sinclair Prairie Oil Co.'s No. 11 Wilson, top sand 3,650 feet, initial production 40 bbls. in one-quarter hour through open tubing, total depth 3,662 feet. Sun Oil Co.'s No. 18 Knight, top sand 3,622 feet, initial production 101 bbls. per hour through open tubing, total depth 3,645 feet. Texas Co.'s No. 20 Henry, top sand 3,670 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,672 feet. Ward Oil Co.'s No. 4 Finley, top sand 3,664 feet, initial production 59 bbls. per hour through open tubing, total depth 3,718 feet.

**Smith County**

Humble Oil & Refining Co.'s No. 9 Thompson, top sand 3,611 feet, initial production 105 bbls. per hour through open tubing, total depth 3,623 feet. R. J. McMurry's No. 5 Robinson, top sand 3,818 feet, initial production 75 bbls. per hour through open tubing, total depth 3,819 feet. Rocky Mountain Oil Co.'s No. 2 Cook, top sand 3,773 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,775 feet. Sinclair Prairie Oil Co.'s No. 27-C Jarvis, top sand 3,678 feet, initial production 26 bbls. in one-quarter hour through open tubing, total depth 3,682 feet. L. Snod's No. 2 Church, top sand 3,760 feet, initial production 50 bbls. per hour through open tubing, total depth 3,768 feet. J. S. Wheelis' No. 8 Smith, top sand 3,684 feet, initial production 92 bbls. per hour through open tubing, total depth 3,690 feet. Howell and Tilley's No. 1 T. O. Jackson, top sand 3,767 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,767 feet.

**Upshur County**

Atlantic Oil Producing Co.'s No. 14 Porter, top sand 3,698 feet, initial production 47 bbls. in one-half hour through open tubing, total depth 3,700 feet. Cal-Petroleum Corp.'s No. 11 Walker, top sand 3,612 feet, initial production 70 bbls. per hour through open tubing, total depth 3,626 feet. Eastern Texas Petroleum Co.'s No. 2 Smith, top sand 3,577 feet, initial production 20 bbls. in 10 minutes through open tubing, total depth 3,586 feet; No. 3 B. F. Smith, top sand 3,573 feet, initial production 20 bbls. in 20 minutes through open tubing, total depth 3,580 feet; No. 7 Smith, top sand 3,571 feet, initial production 20 bbls. in 20 minutes through open tubing, total depth 3,577 feet. Humble Oil & Refining Co.'s No. 9 Smith, top sand 3,635 feet, initial production 62 bbls. per hour through open tubing, total depth 3,670 feet. C. H. Lyons and others' No. 5 T. Dunbar, top sand 3,640 feet, initial production 45 bbls. per hour through open tubing, total depth 3,650 feet; No. 6 Dunbar, top sand 3,640 feet, initial production 60 bbls. per hour through open tubing, total depth 3,645 feet.

Magnolia Petroleum Co.'s No. 4 Brooks, top sand 3,621 feet, initial production 60 bbls. per hour through open tubing, total depth 3,622 feet. Merritt Drilling Co.'s No. 2 R. N. Reed, top sand 3,698 feet, initial production 25 bbls. in two hours through open tubing, total depth 3,705 feet. Mudge Oil Co.'s No. 10-A Richardson, top sand 3,722 feet, initial production 38 bbls. in one-quarter hour through open tubing, total depth 3,754 feet. Peckham Oil Co.'s No. 3-B Webb, top sand 3,692 feet, initial production 90 bbls. per hour through open tubing, total depth 3,710 feet.

**Van Zandt County**

Brothers Co.'s No. 1 Bruce, dry and abandoned, total depth 1,562 feet. W. O. Smith and others' No. 1 Campbell, dry and abandoned, total depth 4,020 feet, N. S. Bratcher Survey.

## West Texas Fields

(Continued from Page 54)

initial production 200 bbls., total depth 3,095 feet. Tide Water Oil Co.'s No. 2 W. F. Scarborough, top pay 2,830 feet, initial production 65 bbls., total depth 3,016 feet.

### COMPLETIONS IN NORTH TEXAS DISTRICT

**Cooke County**

W. B. Hamilton's No. 1 Hickman, dry and abandoned, total depth 1,865 feet.

**Archer County**

Alcorn and Atlantic Oil Producing Co.'s No. 2 Justice, lime 1,069-77 feet, initial production 125 bbls., total depth 1,077 feet. L. T. Burns' No. 7 Perkins, oil sand 1,594-1,602 feet, initial production 250 bbls., total depth 1,602 feet. Burns and Long's No. 12-R Wilson, oil sand 1,452-65 feet, initial production 250 bbls., total depth 1,465 feet. Cullum and Alexander's No. 7-A Falls County, lime 1,092-97 feet, initial production 29 bbls. per hour, total depth 1,097 feet; No. 8-A Falls County, lime 1,098-1,110 feet, initial production 23 bbls. per hour, total depth 1,110 feet. Fain and McGaha's No. 2-E Logan, lime 1,151-70 feet, initial production 500 bbls., total depth 1,170 feet; No. 36 Logan, lime 1,149-67 feet, initial production 600 bbls., total depth 1,167 feet. W. B. Hamilton's No. 17 Pace, lime 1,131-46 feet, initial production 96 bbls., total depth 1,146 feet.

King Royalty Co.'s No. 1 Andrews, dry and abandoned, total depth 1,108 feet. W. E. Maxon, Jr.'s No. 21 Green, lime 1,086-1,101 feet, initial production 35 bbls., total depth 1,101 feet. D. C. Nelson's No. 1 Ford, dry and abandoned, total depth 700 feet. Perkins and Cullum's No. 13-C Falls County, lime 1,164-70 feet, initial production 25 bbls. per hour, total depth 1,170 feet; No. 21 Falls-Titken, lime 1,137-61 feet, initial production 30 bbls. flowing per hour, total depth 1,161 feet. L. E. Peters' No. 1 Andrews, dry and abandoned, total depth 1,005 feet. Petroleum Producers Co.'s No. 2-E Richardson, oil sand 1,238-42 feet, initial production 150 bbls., total depth 1,242 feet. Rathke Oil Co.'s No. 1 Morrison, dry and abandoned, total depth 1,035 feet.

**Jack County**

Brazos River Gas Co.'s No. 6 Clayton, oil sand 2,919-29 feet, initial production 65 bbls., total depth 2,940 feet; No. 1-B King, dry and abandoned, total depth 2,897 feet. Lundieg-Staton and Hamilton's No. 4 Bloodworth, oil sand 313-19 feet, initial production 5 bbls., total depth 319 feet.

**Montague County**

Texas Co.'s No. 6-B Cunningham, oil sand 884-95 feet, initial production 46 bbls., total depth 926 feet.

**Wichita County**

Bauer and Reed's No. 1 Heffler, dry and abandoned, total depth 660 feet. Petroleum Producers Co.'s No. 37 Allen and King, oil sand 1,480-84 feet, initial production 60 bbls., total depth 1,484 feet. Reno Oil & Petroleum Producers Co.'s No. 2-C W. T. Waggoner, dry and abandoned, total depth 956 feet.

**Wilbarger County**

J. H. Massie's No. 1 W. T. Waggoner, dry and abandoned, total depth 2,325 feet. Phillips Petroleum Co.'s No. 3-F W. T. Waggoner, sandy lime 2,520-26 feet, initial production 76 bbls. in seven hours, total depth 2,526 feet. Webb and Green's No. 1 Castleberry, dry and abandoned, total depth 2,850 feet. M. L. Richards' No. 1-D W. T. Waggoner, dry and abandoned, total depth 1,060 feet.

**Young County**

Hinson-Tidwell and Lindsey Drilling Co.'s No. 6 James, sandy lime 3,793-96 feet, shot 170 quarts, initial production 300 bbls., total depth 3,887 feet. A. T. Strong's No. 1 Loving, oil sand 3,376-88 feet, initial production 25 bbls., total depth 3,389 feet.

### COMPLETIONS IN PANHANDLE

**Carson County**

Plains Holding Co.'s No. 1 Bednorz, pay 2,525-2,670 feet, initial production 37,000,000 feet of gas, total depth 2,670 feet.

**Gray County**

Saulsbury and others' No. 1 Cubine, initial production 51,000,000 feet of gas, total depth 2,280 feet. Skelly Oil Co.'s No. 8-A Webb, pay 2,345-86 feet, initial production 261 bbls., total depth 2,487 feet. Dixon Creek Oil & Refining Co.'s No. 1 Carey, shot 300 quarts from 3,244-94 feet, initial production 85 bbls., total depth 3,294 feet. Empire Gas & Fuel Co.'s No. 3-C Archer, shot 200 quarts 3,170-3,215 feet, initial production 230 bbls., total depth 3,220 feet. Indian Territory Illuminating Oil Co.'s No. 3 Smith, pay 3,160-3,223 feet, initial production 642 bbls., total depth 3,255 feet. B. O. Lilly's No. 1 Hughey, shot 280 quarts 2,945-93 feet, initial production 192 bbls., total depth 2,998 feet. Phillips Petroleum Co.'s No. 7 Combs-Worley, pay 2,825-40 feet, initial production 610 bbls., total depth 2,953 feet.

Sinclair Prairie Oil Co.'s No. 1 P. A. Worley, shot 150 quarts 3,191-3,251 feet, initial production 70 bbls., total depth 3,254 feet. Skelly Oil Co.'s No. 5 Heaston, shot 300 quarts 3,186-3,310 feet, initial production 3,310 feet; No. 11 Vicars, shot 200 quarts 3,218-81 feet, initial production 350 bbls., total depth 3,284 feet; No. 12 Vicars, shot 210 quarts 3,214-88 feet, initial production 320 bbls., total depth 3,293 feet. Wilcox Oil & Gas Co.'s No. 27 Combs-Worley, pay 2,877-2,920 feet, initial production 1,140 bbls., total depth 2,921 feet.

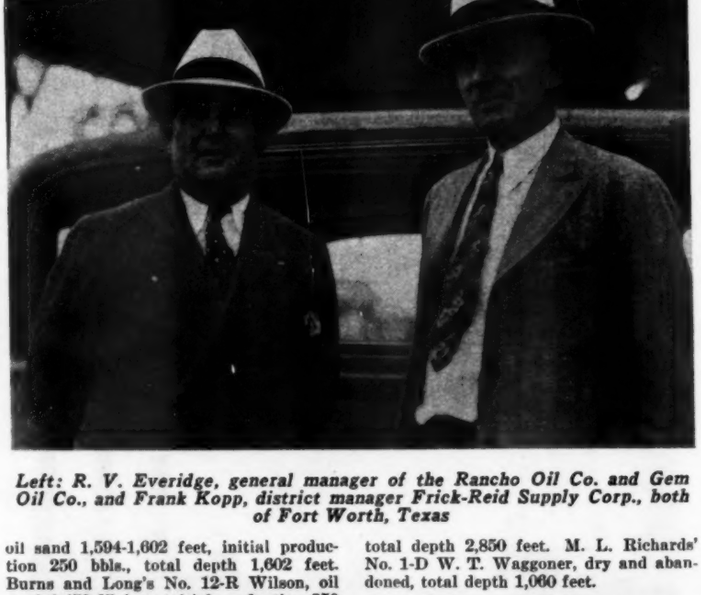
**Hutchinson County**

Continental Oil Co.'s No. 2-E Johnson, total depth 3,192 feet, plugged back to 3,160 feet, initial production 265 bbls. Stanolind Oil & Gas Co.'s No. 6-B Ware, shot 240 quarts 2,964-3,060 feet, initial production 210 bbls., total depth 3,060 feet.

**Wheeler County**

Alma Oil Co.'s No. 2 Johnson, pay 2,416-20 feet, initial production 640 bbls., total depth 2,461 feet. Dumar Oil Co.'s No. 1 Krizman, shot 30 quarts 1,631-66 feet, initial production 12,000,000 feet of gas, total depth 1,702 feet.

Elbar Corp.'s No. 2 Noel, pay 2,424-45 feet, initial production 222 bbls., total depth 2,447 feet. Oklahoma State Oil Co.'s No. 1 D'Spain, dry and abandoned, total depth 2,650 feet. Smith Brothers' No. 1 Harlan, pay 2,465-71 feet, initial production 1,581 bbls., total depth 2,471 feet. Texas Co.'s No. 1 Carwile, pay 2,415-25 feet and 2,475-85 feet, initial production 330 bbls., total depth 2,510 feet.



*Left: R. V. Everidge, general manager of the Rancho Oil Co. and Gem Oil Co., and Frank Kopp, district manager Frick-Reid Supply Corp., both of Fort Worth, Texas*

## More Cities Excepted in Sale of Furnace Oils

Approval was given by Administrator Ickes on June 21 to the exception of the cities of Chicago, St. Louis, Detroit and Kansas City in the application of posted price provision for the sale of range oil, Diesel oil and fuel oil. The recommendation of the P. and C. committee as approved by the administrator, follows:

"'(c) That no guarantee of a fixed or top price over a period be made except as heretofore provided and also except

1. Range oil, Diesel fuel and domestic fuel oils (numbers one, two and three, as defined by Commercial Standards in effect at the time contract is made) may be sold with a top price not lower than 1½ cents more than the posted price without discount on the date contract is made except as hereinafter provided in the metropolitan areas of Chicago, Ill.; Detroit, Mich.; St. Louis and Kansas City, Mo.

2. Industrial fuel oils (numbers four, five and six as defined by Commercial Standards in effect at the time contract is made) may be sold with a top price not lower than 1 cent more than the posted price without discount on the date contract is made, except as hereinafter provided in the metropolitan areas of Chicago, Ill.; Detroit, Mich.; St. Louis and Kansas City, Mo.

3. In the metropolitan areas of Chicago, Ill.; Detroit, Mich.; St. Louis and Kansas City, Mo., in order to meet the severe competition of other fuels, range oil, Diesel fuel and domestic fuel oils (numbers one, two, three and four, as defined by Commercial Standards in effect at the time contract is made, may be sold with a top price not lower than 1 cent more than the posted price without discount on the date contract is made.

4. In the metropolitan areas of Chicago, Ill.; Detroit, Mich.; St. Louis and Kansas City, Mo., in order to meet the severe competition of other fuels, industrial fuel oils (numbers five and six, as defined by Commercial Standards in effect at the time contract is made) may be sold with a top price not lower than one-half cent more than the posted price without discount on the date contract is made.'"

# California Oil Field Operations for May, 1934

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for May amounted to 15,070,718 bbls., an average of 486,152 bbls. per day. This is an increase of 3,726 bbls. per day over April production.

Forty-three wells were completed during the month with an initial production of 83,009 bbls., compared with 29 wells completed during April with an initial production of 49,516 bbls.

### CRUDE PETROLEUM PRODUCTION

(Figures of Production and Stocks are in barrels of 42 Gallons)

| | Bbls. per month | Daily Average May, 1934 | Apr., 1934 | May, 1933 |
|---|---|---|---|---|
| **Group 1** | | | | |
| Belridge—North | 218,005 | 7,032 | 6,659 | * |
| Belridge—South | 66,087 | 2,132 | 2,071 | * |
| Coalinga | 533,525 | 17,211 | 16,257 | 10,938 |
| Elk Hills | 277,292 | 8,945 | 10,908 | 12,596 |
| Fruitvale | 117,660 | 3,796 | 3,719 | 4,938 |
| Kern River | 319,816 | 10,317 | 9,294 | 8,659 |
| Kettleman Middle Dome | 8,186 | 264 | 221 | 854 |
| Kettleman North Dome | 1,826,201 | 58,910 | 55,853 | 61,095 |
| Lost Hills | 115,962 | 3,741 | 3,594 | *9,299 |
| McKittrick | 96,973 | 3,128 | 3,241 | 1,741 |
| Midway-Sunset | 1,767,250 | 57,008 | 54,268 | 46,892 |
| Mountain View | 192,501 | 6,210 | 5,864 | 824 |
| Mount Poso | 268,000 | 8,645 | 8,740 | 8,352 |
| Round Mountain | 154,431 | 4,982 | 5,044 | 2,846 |
| Wheeler Ridge | 13,604 | 439 | 431 | 482 |
| **Group 2** | | | | |
| Capitan | 16,957 | 515 | 341 | 17 |
| Elwood | 360,170 | 11,618 | 11,731 | 13,390 |
| Rincon | 47,476 | 1,531 | 1,701 | 1,938 |
| San Miguelito | 22,452 | 724 | 698 | 1,140 |
| Santa Barbara | 28,909 | 933 | 553 | 856 |
| Santa Maria | 152,310 | 4,913 | 4,842 | 2,499 |
| Summerland | 1,161 | 37 | 66 | 67 |
| Ventura Avenue | 828,581 | 26,728 | 27,394 | 32,646 |
| Ventura-Newhall | 116,937 | 3,772 | 3,664 | 3,289 |
| Watsonville | 1,860 | 60 | 60 | 60 |
| **Group 3** | | | | |
| Brea-Olinda (Fullerton) | 321,793 | 10,380 | 9,334 | 7,461 |
| Coyote—East | 80,370 | 2,593 | 2,430 | |
| Coyote—West | 259,212 | 8,362 | 8,796 | †9,946 |
| Dominguez | 521,229 | 17,136 | 20,496 | 19,595 |
| Huntington Beach | 1,292,463 | 41,692 | 39,683 | 29,136 |
| Inglewood | 243,801 | 7,865 | 9,180 | 12,020 |
| Lawndale | 4,343 | 140 | 142 | 230 |
| Long Beach | 2,113,767 | 68,186 | 66,934 | 73,274 |
| Los Angeles-Salt Lake | 24,868 | 802 | 756 | 855 |
| Montebello | 159,953 | 5,160 | 5,082 | 4,820 |
| Newport | .... | .... | .... | .... |
| Playa Del Rey | 282,424 | 9,110 | 9,771 | 11,875 |
| Potrero | 13,674 | 441 | 468 | 352 |
| Richfield | 246,834 | 7,962 | 7,932 | 6,419 |
| Rosecrans | 80,775 | 2,606 | 2,721 | 3,170 |
| Santa Fe Springs | 1,294,120 | 41,746 | 42,325 | 53,844 |
| Seal Beach | 320,552 | 10,340 | 11,026 | 12,238 |
| Torrance | 215,252 | 6,944 | 6,444 | 6,251 |
| Whittier | 33,982 | 1,096 | 1,083 | 1,094 |
| Total | 15,070,718 | 486,152 | 482,426 | 477,988 |
| April | 14,472,785 | 482,426 | | |
| Increase | 597,933 | 3,726 | | |

*Lost Hills figure includes North and South Belridge. †East and West Coyote were previously combined as Coyote.

### OILFIELD DEVELOPMENT

| | New rigs up | Active drilling | Pro. ducers completed | Daily initial output | Active producing | Abandoned wells Drillers | Abandoned wells Producers |
|---|---|---|---|---|---|---|---|
| **Group No. 1:** | | | | | | | |
| Belridge—North | 2 | 4 | 1 | 5,852 | 20 | .. | .. |
| Belridge—South | .. | 1 | .. | ..... | 104 | .. | .. |
| Coalinga | .. | .. | .. | ..... | 856 | .. | .. |
| Elk Hills | .. | .. | .. | ..... | 196 | .. | .. |
| Fruitvale | .. | 2 | .. | ..... | 59 | .. | 1 |
| Kern River | 3 | .. | 2 | 356 | 1,290 | .. | .. |
| Kettleman Middle Dome | .. | 1 | .. | ..... | 1 | .. | .. |
| Kettleman North Dome | 7 | 34 | 7 | 56,256 | 63 | .. | .. |
| Lost Hills | .. | .. | .. | ..... | 310 | .. | .. |
| McKittrick | .. | 2 | .. | ..... | 196 | .. | 1 |
| Midway-Sunset | 3 | 5 | 2 | 1,116 | 2,404 | .. | .. |
| Mountain View | 8 | 15 | 4 | 6,484 | 15 | 1 | .. |
| Mount Poso | 4 | 7 | 3 | 2,081 | 130 | .. | .. |
| Round Mountain | 1 | 1 | 1 | 185 | 41 | 1 | .. |
| Wheeler Ridge | .. | .. | .. | ..... | 34 | .. | .. |
| **Group No. 2:** | | | | | | | |
| Capitan | 1 | 1 | .. | ..... | 6 | .. | .. |
| Elwood | 1 | 5 | 1 | 3,541 | 53 | .. | .. |
| Rincon | .. | .. | .. | ..... | 32 | .. | .. |
| San Miguelito | .. | 1 | .. | ..... | 3 | .. | .. |
| Santa Barbara | 2 | 2 | 1 | 1,500 | 17 | .. | .. |
| Santa Maria | .. | 2 | .. | ..... | 166 | 2 | .. |
| Summerland | .. | .. | .. | ..... | 22 | .. | .. |
| Ventura Avenue | 2 | 11 | .. | ..... | 182 | .. | .. |
| Ventura-Newhall | 2 | 10 | 2 | 115 | 463 | .. | .. |
| Watsonville | .. | .. | .. | ..... | 7 | .. | .. |
| **Group No. 3:** | | | | | | | |
| Brea-Olinda (Fullerton) | .. | .. | .. | ..... | 350 | .. | .. |
| Coyote—East | 1 | 1 | 1 | 25 | 72 | .. | .. |
| Coyote—West | 1 | 2 | 2 | 1,255 | 42 | .. | .. |
| Dominguez | 2 | 10 | .. | ..... | 55 | .. | .. |
| Huntington Beach | 2 | 3 | 2 | 1,256 | 442 | 1 | 5 |
| Inglewood | 1 | 7 | .. | ..... | 192 | .. | .. |
| Lawndale | .. | .. | .. | ..... | 7 | .. | .. |
| Long Beach | 1 | 18 | 11 | 2,133 | 1,049 | 1 | 5 |
| Los Angeles-Salt Lake | .. | .. | .. | ..... | 156 | .. | 4 |
| Montebello | 3 | 9 | 2 | 517 | 174 | .. | 1 |
| Newport | .. | .. | .. | ..... | .... | .. | .. |
| Playa Del Rey | .. | .. | 1 | 337 | 164 | .. | .. |
| Potrero | .. | .. | .. | ..... | 9 | .. | .. |
| Richfield | .. | .. | .. | ..... | 215 | .. | 2 |
| Rosecrans | .. | .. | .. | ..... | 66 | 2 | .. |
| Santa Fe Springs | 1 | 6 | .. | ..... | 527 | 1 | 5 |
| Seal Beach | .. | 1 | .. | ..... | 114 | 1 | .. |
| Torrance | .. | .. | .. | ..... | 453 | .. | .. |
| Whittier | .. | .. | .. | ..... | 152 | .. | .. |
| Miscellaneous drilling | 7 | 32 | .. | ..... | ..... | .. | .. |
| **Group No. 4:** | | | | | | | |
| Buttonwillow gas field | .. | .. | .. | ..... | ..... | .. | .. |
| Dudley Ridge gas field | 2 | 4 | .. | ..... | ..... | .. | .. |
| Goleta gas field | 1 | 1 | .. | ..... | ..... | .. | .. |
| Total May | 58 | 188 | 43 | 83,009 | 10,909 | 10 | 24 |
| Total April | 42 | 187 | 29 | 49,516 | 10,831 | 25 | 10 |
| Increase | 16 | 1 | 14 | 33,493 | 78 | *15 | 14 |
| Average for year 1933 | 30 | 134 | 21 | 23,842 | 9,199 | 14 | 18 |
| Average for year 1932 | 18 | 108 | 15 | 13,069 | 8,928 | 16 | 14 |
| Average for year 1931 | 22 | 207 | 21 | 30,270 | 8,911 | 20 | 15 |

*Decrease.

## East Central Texas Wildcats

(Continued from Page 56)

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 5 Wills, 1,400 ft. from most northerly S line and 467 ft. from E line of tract, W offset to Barnsdall Oil Co.'s No. 1 Tubbs, Samuel Edmondson Sur. ..... Waiting on cmt to set; T.D. 4,070 ft.

**CHEROKEE COUNTY**

Jacksonville Oil & Gas Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-acre tract out of Tankersley 104-acre tract, 5 miles NE of Jacksonville on W side of railroad, J. Pineda Sur. ..... Moving in.

C. & G. Oil Co.'s No. 1 New Birmingham Development Co., 467 ft. from N and W of SW cor. of J. Gibb Sur., J. F. Timmons Sur. ..... Drlg. 4,170 ft.

Southern Gulf Oil Co.'s No. 1 Joe Bailey, center 164-acre tract, 4 miles NE of Ponta, L. R. Rhodes Sur., Abstract No. 724 ..... S.D. 1,000 ft.

T. J. Wood et al's No. 1 New Birmingham, 660 ft. from S and E lines of 1,128-ac. tract, 7 miles SW of Rusk, Levi Jordan Sur. ..... Plugged back 180 ft.; waiting on cmt. to set.

Zilkey and McCulloch's No. 1 Bradford, 2,500 ft. from most southerly S line and 771 ft. from E line of survey, 4 miles E of Rusk, J. Armendaris Sur. ..... Location.

**FANNIN COUNTY**

L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 200 ft. from N line of survey, W. Hunt Sur. .... Waiting on cmt. to set; T.D. 3,278 ft.

**FREESTONE COUNTY**

Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur. ..... Drlg. 5,472 ft.

Gholson et al's No. 1 E. M. and C. H. Watson, 1,450 varas from N line and 1,150 varas from W line of survey, 6 miles NE of Fairfield, R. D. Price Sur. ..... Location.

Trinity Farm Co.'s No. 1 N. R. Stewart, 1,866 ft. SW from NE line and 933 ft. SE from NW line of 1,920-ac. tract, R. M. Williamson Sur. ..... Moving in.

J. E. Wilburn's No. 1 S. McShan, 4,000 ft. from MWL and 5,000 ft. from NEL of survey, G. Diaz Sur. ..... Waiting on cmt. to set.

**HENDERSON COUNTY**

Big Bad Wolf Oil Co.'s No. 1 McCreary, 1,800 ft. from W line and 330 ft. from S line of survey, 6 miles S of Malakoff, W. H. Irvin Sur. ..... Derrick.

**HOPKINS COUNTY**

D. A. Hale et al's No. 1 L. M. Hall, 200 ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Grove, A. Caro Sur. ..... Derrick.

**HUNT COUNTY**

H. G. Waggoner et al's No. 1 Love (old well being drilled deeper), 300 ft. from N line and 650 ft. from W line of 95-ac. tract, John Gilisky Sur. ..... Drlg. 3,512 ft.

G. S. & S. Co.'s No. 1 Oscar Popper, 2,670 varas from S line and 810 varas from E line of survey, 5 miles NW of Greenville, James Moore Sur. ..... Drlg. 40 ft.

**KAUFMAN COUNTY**

W. J. Lewis et al's No. 1 D. Clark, 430 ft. from S line and 600 ft. from E line of survey, 6½ miles NW of Elmo ..... S.D. 500 ft.

**LAMAR COUNTY**

Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur. ..... S.D. 2,506 ft.

**MORRIS COUNTY**

McGinnis et al's No. 1 Staggers, 800 ft. from S line of survey and 150 ft. from W line of lease, J. B. Nelson Survey ..... Drlg. 2,430 ft.

**NACOGDOCHES COUNTY**

Livingston Oil Co.'s No. 1 C. B. Watkins, 150 ft. from N line and 330 ft. from NW lines of 160-ac. tract, 3 miles S of Caro, H. Y. Bailey Sur. ..... Drlg. 2,783 ft.

J. W. Rich and others' No. 1-A R. W. Hazlewood, 5,450 ft. from S line and 2,800 ft from W line of survey, 50 ft. N of No. 1, 15 miles SW of Nacogdoches, Ewing Sur. ..... Rig up.

**NAVARRO COUNTY**

Bennett Brothers' No. 1 T. E. Stewart, 150 ft. from NE L of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur. ..... S.D. 424 ft.

W. J. Keeling et al's No. 1 J. F. Rushing, 484 ft. from N line and 150 ft. from W line of 184-ac. tract, 6 miles SW of Richardson, Henry Ford Sur. ..... Derrick.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-ac. tract, 1 mile W of Dawson, William Moss Sur. ..... S.D. 625 ft.

Wheelock and Collins' No. 1 I. N. Cerf, 375 ft. from N line of lease and 1,050 ft. from W line of lease, James Smith Sur. No. 726 ..... Drlg. 3,254 ft.

**RAINES COUNTY**

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 22-ac. tract, 3½ miles S of Alba, B.B. B.&C. Sur. ..... Drlg. 3,920 ft.

**RUSK COUNTY**

George Hudson et al's No. 3 Jeff Phillips, 150 ft. from N line of survey and 700 ft. from W line of 160-ac. tract, 4 miles SE of Minden, N. Villaria Sur. ..... S.D. 3,616 ft.

**SMITH COUNTY**

Preston Rose et al's No. 1 Elisha Wiggins, 2,300 ft. from W line and 330 ft. from S line of 640-ac. tract, 2 miles SW of Winona, F. H. K. Day Sur., Abstract No. 285 ..... S.D. 4,060 ft.

**UPSHUR COUNTY**

Ben G. Barnett et al's No. 1 W. S. Jones, 200 ft. out of SW cor. of 100-ac. tract, 1½ miles NW of Jamestown, James N. Dunn Sur. ..... Bailed S.W. 3,700 ft.

Virgil Hodges et al's No. 1 J. M. Floyd, 330 ft. from NE cor. of 126-ac. tract, 4 miles N of Gladewater, Railroad Sur. ..... Drlg. 2,750 ft.

Lanier and Moore's No. 1 Vaughan, 330 ft. from S line and 330 ft. from W line of 100-ac. tract, 2 miles NW of Big Sandy, P. W. Standifer Sur. ..... S.D. 1,042 ft.

Randerson et al's No. 1 Nid Minor, 660 ft. from NW line and 1,800 ft. from NE line of tract, D. R. Cannon Sur. ..... S.D. 3,700 ft.

**VAN ZANDT COUNTY**

Martin and Evans' No. 1 L. M. Palmer, 150 ft. from S line and 850 ft. from W line of 69.81-ac. tract, Nacogdoches County School Land ..... Location.

Germany et al's No. 1 C. S. Coker, 150 ft. out of SW cor. of 55-ac. tract, William Daniel Sur. ..... S.D. 1,208 ft.

Gillum and Allen et al's No. 1 A. T. Bass, 150 ft. from W. line and 150 ft. from N line of 10-ac. tract, William Hart Sur. ..... S.D. 4,236 ft.

Isaac et al's No. 1 C. F. Darrell, 330 ft. from S and W lines of 53-ac. tract, C. B. River Sur. ..... Drlg. 1,322 ft.

Markin & Evens' No. 1 L. M. Palmer, 850 ft. E of W line and 150 ft. N of S line of 69.8-acre tract, one-tenth mile E of Pruitt, Nacogdoches County School Land Sur. ..... Preparing to spud.

W. E. McKinney et al's No. 2 B. T. Davis, 285 ft. from N line and 235 ft. from W line of 13-ac. tract, J. Goodman Sur. ..... 1 bbl. per day, no pressure.

Miller et al's No. 1 J. M. Palmer, 150 ft. from S and E lines of 69-ac. tract, Nacogdoches County School Land Sur. ..... Drlg. 200 ft.

Peden and Olson's No. 3 W. Banson, 600 ft. S of No. 2 and 140 ft. from W line of tract, J. Goodman Sur. ..... Bldg. derrick.

Pure Oil Co.'s No. 5 A. G. Maxfield, 1,676 feet N of S line and 250 ft. W of E line of the Maxfield 107.8-acre tract, Nacogdoches County School Land Sur.....Rig up.
Wheeler et al's No. 1 Cade, 180 ft. from S line and 150 ft. from E line of 20-ac. tract, Nacogdoches County School Land Sur. .....S.D. 1,265 ft.
Peden and Olsen's No. 1 J. M. Palmer, 200 ft. from E and N lines of south 3 acres of 94-ac. tract, Nacogdoches County School Land Sur. .....Bailed dry; got 70 ft. of oil in hole.

WOOD COUNTY

Cauble and Thompson's No. 1-A N. G. Bobbett, 900 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. .....S.D. 5,554 ft.
Alex Snyder et al's No. 1 T. Holmes, 200 ft. out of NE cor. of 122-ac. tract, 1¼ miles SE of Hawkins, A. N. McKnight Sur. No. 399 .....S.D. 3,484 ft.

## Wildcat Operations in West Texas

(Continued from Page 54)

C. J. Davidson et al's No. 1 Cole, 660 ft. from N line and 660 ft. from W line of Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur. .....Drlg. 4,354 ft.
Harrison et al's No. 2 Addis, 990 ft. from N line and 2,309 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. .....S.D. 3,845 ft.
Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,300 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. .....Location.
Humble Oil & Ref. Co.'s No. 3 Jones, 2,310 ft. from S and 2,310 ft. from W, Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. .....Moving in.
Humble Oil & Ref. Co.'s No. 1 H. H. Pegues, 2,310 ft. from E and 2,310 ft. from S, Sec. 37, Blk. 43, Twp. 2s, T.&P. Sur. .....Derrick.
Landreth Prod. Co.'s No. 2-A Texas Pacific Land Trust, 441 ft. from N line and 440 ft. from W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. .....Drlg. 1,290 ft.
Landreth Prod. Co.'s No. 1-B T. P. Land Trust, 2,200 ft from the S line and 440 ft. from the W line of Sec. 3, Blk. 43, Twp. 1s, T.&P. Sur. .....Drlg. 3,700 ft.
Landreth Prod. Co.'s No. 1-C T.P. Land Trust, 440 ft. N and 440 ft. W of Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur. .....Derrick.
Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P. Sur. .....Rig up.
Landreth Prod. Co.'s No. 1 Clarence Scharbauer, 660 ft. from S and E lines of Sec. 20, Blk. 44, Twp. 1n., T.&P. Sur. .....Drlg. 2,435 ft.
Landreth Prod. Co.'s No. 1 O. B. Holt, 1,980 ft. from S line and 660 ft. from E line of Sec. 19, Blk. A. P.S.L. Sur. .....Drlg. 4,033 ft.
McCurdy et al's No. 1 Foster, 330 ft. from S line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur. .....T.D. 4,285 ft.
Moran Drlg. Co.'s No. 1 Smith, 330 ft. from N line, 330 ft. from W line of Sec. 13, Blk. 43, Twp. 1s, T.&P. Sur. .....S.D. 4,425 ft.
Skelly Oil Co.'s No. 1 Connell, 1,650 ft. from N line and 440 ft. from E line of Sec. 11, Blk. 16, P.S.L. Sur. .....Drlg. 3,410 ft.
Skelly Oil Co.'s No. 5-A University, 660 ft. from N and 1,980 ft. from E, Sec. 1, Blk. 35, University Sur. .....Location.
Texas Co.'s No. 10 W. E. Connell, 2,310 ft. from E line and 330 ft. from the S line of Sec. 1, Blk. B-16. P.S.L. Sur. .....Drlg. 1,080 ft.
Fred Turner's No. 3-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ...Cellar.
York-Harper et al's No. 1 Bates, 660 ft. from N and 660 ft. from E, Sec. 38, Blk. 44, Twp. 2s, T.&P. Sur...Drlg. 3,415 ft.

EDWARDS COUNTY

O. Houseman's No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.& R.G.N.G. Sur. .....T.D. 410 ft.; no report.
H. R. Sides' No. 1 Turney, 1,650 ft. from N line and 330 ft. from W line of Sec. 176, C.C.S.D.&R.G.N.G Sur. .....T.D. 500 ft.; no report.

FISHER COUNTY

E. T. Campbell et al's No. 1 W. R. Bishop, 570 ft. from S and 150 ft. from E of NW cor. of Sec. 18, Blk. 21, T.&P. Sur. .....Moving in.
Condor Pet. Co.'s No. 1 Herring, 450 ft. from S and 330 ft. from W line of Sec. 192, Blk. 1, B.B.B.&C. Sur. .....T.D. 3,110 ft.; plugged back to 3,106 ft.; will treat with acid.
Condor Pet. Co.'s No. 2 Wilson, 640 ft. from N and 2,310 ft. from W line of Sec. 6, Blk. R, W. E. Richardson Sur. .....Drlg. 750 ft.
Stanolind Oil & Gas Co.'s No. 5 Steele, 1,170 ft. from S and 990 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. .....S.D.: T.D. 3,180 ft.
Texas Co.'s No. 2-B Teagarden, 990 ft. from S and 330 ft. E of NW cor. of S half of Sec. 9, Blk. 8, W. E. Richardson Sur. .....Material on ground.
Texas Co.'s No. 1 First National Bank of Rotan, 330 ft. N and E of the NW cor. of Sec. 210, B.B.B.&C. Sur. .....Drlg. 1,015 ft.

GLASSCOCK COUNTY

Continental Oil Co.'s No. 3 Hart Phillips, 1,050 ft. from N and 660 ft. from W, Sec. 24, Blk. 33, Twp. 2s, T.&P. Sur. .....Location.
Steve Currie et al's No. 1 Underwood, 660 ft. from N line and 660 ft. from E line of Sec. 24, Blk. 3, Twp. 4s, T.&P. Sur. .....Spudding.
John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur. .....T.D. 2,680 ft.
Luce & Pickens' No. 1 Lee, 330 ft. from N and 330 ft. from W, Sec. 20, Blk. 33, Twp. 2s, T.&P. Sur. .....Drlg. 825 ft.
Simms Oil Co.'s No. 2 W. P. Edwards, 330 ft. from S and 990 ft. from E of Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur. .....Drlg. 2,300 ft.
Simms Pet. Co.'s No. 3 W. P. Edwards, 330 ft. from E line, 1,358 ft. from S line, Sec. 18, Blk. 33, Twp. 2s, T.&P. Sur .....Drlg. 2,130 ft.
Tribal Oil Co.'s No. 5 M. M. Edwards, 330 ft. from S line and 990 ft. from the W line of Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. .....To plug back; T.D. 2,140 ft.

HOWARD COUNTY

Eastland Oil Co.'s No. 1 Chalk, 2,310 ft. from S and 1,980 ft. from W, Sec. 125, Blk. 29, W.&N.W. Sur.....Underreaming 240 ft.
Fuglarr & Patterson's No. 1 Hyman, 330 ft. from S line and 330 ft. from W line of Sec. 89, Blk. 29, W.&N.W. Sur. .....Drlg. 558 ft.
Humble Oil & Ref. Co.'s No. 4 Settles, 330 ft. from S and 2,310 ft. from W, Sec. 132, Blk. 29, W.&N.W. Sur. .....Drlg. 1,375 ft.
California Oil Co.'s No. 1 A. M. Bell, 465 ft. from W line and 1,915 ft. from E line of Sec. 12, Blk. 30, Twp. 1s, T.&P. Sur. .....Drlg. 1,580 ft.
California Oil Co.'s No. 1 Dodge, 1,915 ft. from E line and 465 ft. from S line of Sec. 1, Blk. 30, T.&P. Sur...Spudded 200 ft.
Continental Oil Co.'s No. 9 Settles, 330 ft. from N line and 990 ft. from W line of Sec. 133, Blk. 29, W.&N.W. Sur. .....Drlg. 2,270 ft.
Dorn et al's No. 1-B Davis, 2,310 ft. from N line and 2,310 ft. from W line of Sec. 2, Blk. 30, Twp. 1s, T.&P. Sur. .....S.D. 1,075 ft.
L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, Blk. 30, Twp. 1s, T.&P. Sur. .....Derrick.
Plymouth Oil Co.'s No. 11 Kloh, 1,320 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. .....Underreaming 1,625 ft.
Permian Pacific Pet. Co.'s No. 1 Capps, 330 ft. from SW cor. of Sec. 17, Blk. 29, Twp. 1n, T.&P. Sur.....Location.
Plymouth Oil Co.'s No. 10 Kloh, 660 ft. from S line and 660 ft. from W line of Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. .....S.D. 2,465 ft.
Joe Rusk et al's No. 3 G. M. Dodge, 330 ft. from the N line, 330 ft. from the E line, Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. .....Moving in machine.
Sinclair Prairie Oil Co.'s No. 13 Dodge, 330 ft. from S line and 2,360 ft. from W line, Sec. 11, Blk. 30, Twp. 1s, T.&P. Sur. .....Set csg. 2,350 ft.
Southern Oil Co.'s No. 1 Frazier, 660 ft. from S line and 660 ft. from W line of Sec. 4, Blk. 33, Twp. 1s, T.&P. Sur. .....Drlg. 2,150 ft.

IRION COUNTY

S. E. Colgin's No. 1 Tankersley, 550 ft. from E of river and 150 ft. from S line of Sec. 723, H. J. Voelker Sur. .....S.D. 1,358 ft.
Melrose Oil Co.'s No. 1 J. D. Sugg, 1,700 ft. from the E line and 308 ft. from the S line of Sec. 25, Blk. 2, H.&T.C. Sur. .....Spudded and S.D.
Williams-Short's No. 1 Gentry, 2,300 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur...Cleaning out 1,220 ft.

JONES COUNTY

Clifton & Brazelton et al's No. 1 Cassey, 200 ft. from N and W lines of SE cor. of Sec. 15, Blk. 15, T.&P. Sur. .....S.D. 800 ft.
Elmer Close et al's No. 1 A. B. Faulks, 330 ft. from N line and 330 ft. from W line of Subdiv. No. 27, Henry Millard Sur. .....S.D. 1,970 ft.
Guthrie & Lancaster's No. 1-B Campbell, 330 ft. from N and 2,276 ft. from E line of Sec. 15, Blk. 19, T.&P. Sur. .....S.D. 1,020 ft.
Southern Oil Corp.'s No. 2 Williams, 330 ft. from S and W line of Sec. 17, Blk. 19, T.&P. Sur. .....Underreaming; T.D. 2,360 ft.

LOVING COUNTY

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 82, Blk. 33, H.&T.C. Sur. .....Location.
R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. .....Location.
R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. .....Location.
The California Oil Co.'s No. 8 Reagan-McElvain, 330 ft. from NW and SW lines of Sec. 84, Blk. 1, W.&N.W. Sur. .....Drlg. 4,137 ft.
Eppenauer Drlg. Co.'s No. 2 Hammill & Ellis, 410 ft. from NW and 796 ft. from NE lines of Sec. 2, Blk. 1, W.&N.W. Sur. .....Cellar.
D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur. .....Machine.
H. W. Martin's No. 4 Wheat, Ramsey, 990 ft. from SE and SW lines of Sec. 83, Blk. 1, W.&N.W. Sur. .....Drlg. 2,775 ft.
J. F. Slack's No. 1 Covey, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 3, Blk. 2, W.&N.W. Sur...Drlg. 2,000 ft.

PECOS COUNTY

Mack T. Anderson's No. 1 McKenzie, 660 ft. from S line and 660 ft. from W line of Sec. 1, Blk. 604 .....T.D. 1,365 ft.; hole full of oil.
California Oil Co.'s No. 7 Smith, Lease No. 1, 275 ft. from N and 1,094 ft. from E, Sec. 37, Blk. 194, G.C.&S.F. Sur. .....Drlg. 900 ft.
Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 730 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. .....Waiting on orders; T.D. 481 ft.
Cardinal Oil Co.'s No. 21-E Tippett, 336 ft. from S and 631 ft. from W of C of Sec. 40. Blk. 194, G.C.&S.F. Sur. .....Se. csg. 609 ft.; showing oil.
Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,380 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F. Sur. .....Location.
C. S. Messenger's No. 2 Rand Jones, 1,935 ft. from S line and 1,013 ft. from W line of Sec. 5, Blk. 9, H.&G.N. Sur. .....S.D. 350 ft.
Mid-Kansas Oil & Gas Co.'s No. 18 Smith-Taylor, 1,320 ft. from S line, 1,320 ft. from W line, Sec. 33, Blk. 194, G.C.&S.F. Sur. .....Location.
Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 350 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. .....Road.
Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Trace No. 1, Sec. 33 .....S.D. 750 ft.
Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 .....Cellar.
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 350 ft. from N line and 350 ft. from W line of Turner Sur. No. 3..S.D. 690 ft.
Mid-Kansas Oil & Gas Co.'s No. 12-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. W of SE cor. of S half of Tract No. 1 .....Location.
Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 32 and 344 ft. E of SE cor. of S half of Tract No. 1 .....Location.
Mid-Kansas Oil & Gas Co.'s No. 27 Smith-Taylor, 194 ft. from N and 865 ft. from E of Sec. 33, Blk. 194, G.C.&S.F. Sur. .....S.D. 505 ft.
Mid-Kansas Oil & Gas Co.'s 35-B Yates, 1,619 ft. from N and 159 ft. from W of Sec. 61, Blk. 1, I.&G.N. Sur. .....Running csg.; T.D. 1,120 ft.
Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 250 ft. E and 305 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. .....Location.
Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner tract No. 4, in Sec. 34½, I. G. Yates Sur. .....Cellar.
Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 .....S.D. 680 ft.
Mid-Kansas Oil & Gas Co.'s No. 34-B Yates, 1,988 ft. from N line and 498 ft. from W line of Sec. 61, I.&G.N. Sur. .....S.D. 1,107 ft.
Simms Pet. Co.'s No. 3 A. J. Devlin, 330 ft. from the N line and 330 ft. from the E line of the most easterly NE cor. of Sec. 2, John D. Duval Sur., Abst. No. 3,824 .....Location.
Tex-Mex Pet. Co.'s No. 1 Netterville, 5,610 ft. from S and 330 ft. from W of Sec. 59, Blk. 8, H.&G.N. Sur...Drlg. 1,225 ft.
Trans-Texas Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur. .....S.D. 340 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 15-C University, Sec. 12, Blk. 2...Drlg. 4,320 ft.
E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 800 ft. from N of Sec. 1,223, H.L.R.R. Sur. .....S.D. 2,890 ft.

**REEVES COUNTY**

Grisham & Hunter Corp.'s No. 1-A fee, 1,320 ft. from N line and 1,470 ft. from E line, Sec. 1, Blk. 50, Twp. 8, T.&P. Sur. ..... Location.

**Grisham-Hunter Corp.'s No. 1 fee, 1,320 ft. from N line, 1,320 ft. from the E line of Sec. 10, Blk. 50, Twp. 8, T.&P. Sur.** ..... Drlg. 4,010 ft.

**Hugo Freels' No. 1 B. Greenman, 330 ft. from NE line and 231 ft. from SE line of Sec. 21, Blk. 2, H.&G.N. Sur.** ..... Shot 220 qts. from 3,778 3,980 ft.; no results; S.D.; T.D. 3,985 ft.

**RUNNELS COUNTY**

**Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 23, N. Travis Sur.** ..... S.D. 2,559 ft.

**Agnew and Currie's No. 1 H. E. Wade, 2,640 ft. from N line and 320 ft. from E line of Sec. 24, Domingo Diaz Sur. No. 532** ..... Set surface csg.; T.D. 33 ft.

**Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur.** ..... Drlg. 1,060 ft.

**Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,475 ft. from W line of survey, Willett Holmes Sur. No. 100** ..... T.D. 1,429 ft.

**W. S. Sawyer et al's No. 1 Giesecke, 1,211 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur.** ..... S.D. 2,033 ft.; showing oil.

**F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 13, but in Blk. 13, N. Travis Sur. No. 533** ..... S.D. 1,400 ft.

**SCHLEICHER COUNTY**

**John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur. (old well being drilled deeper)** ..... Drlg. 5,538 ft.

Humble Oil & Ref. Co.'s No. 1 Ike Honig, 2,640 ft. from N line and 2,650 ft. from E line of Sec. 38, Blk. M, G.H.&S.A. Sur. ..... Location.

**SCURRY COUNTY**

Paul C. Teas' No. 1 Chapman, 660 ft. from S and 660 ft. from W, Sec. 100, Blk. 9, H.&T.C. Sur. ..... Spudded.

**TERRELL COUNTY**

**W. A. Sudderth's No. 1 Phelps, 2,157 ft. from N line and 2,482 ft. from the W line of Sec. 5, Blk. 4-A, G. W. Turley Sur.** ..... S.D. 5,635 ft.

**TOM GREEN COUNTY**

Southwest Exploration Co.'s No. 1 Bennett, 1,320 ft. from S and 1,320 ft. from W of Section 1,628, Behringer Sur. ..... Underreaming; T.D. 2,536 ft.

**UPTON COUNTY**

Broderick & Calvert's No. 1 Homer Trus. & Savings Bank, 1,980 ft. from N line, 660 ft. from W line, Sec. 22, Blk. B-42, Twp. 4s, T.&P. Sur. ..... T.D. 450 ft.

**Gulf Prod. Co.'s No. 108 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.** ..... Drlg. 10,425 ft.

Perry & Breeding's No. 1 Lane, 1,650 ft. from S line and 990 ft. from E line of Sec. 36, Blk. 1, M.K.&T. Sur. .. Location.

Texas Pacific Coal & Oil Co.'s No. 3-D J. F. Land, 990 ft. from S line and 990 ft. from W line of Sec. 36, Blk. 1, M.K.&T. Sur. ..... T.D. 2,212 ft.

Theabotal Oil Co.'s No. 2 J. F. Lane, 1,650 ft. from N and 990 ft. from E of Sec. 36, Blk. 1, M.K.&T. Sur. ..... S.D. 1,740 ft.

**Williams & Williams Drlg. Co.'s No. 1, Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur.** .... S.D. 1,995 ft.

**VAL VERDE COUNTY**

**South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. L, G.C.&S.F. Sur.** ..... Rig up.

**WARD COUNTY**

Atlantic Oil & Prod. Co.'s No. 3 Barrow, 2,310 ft. from NE line and 990 ft. from NW line of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,925 ft.

**Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.** ..... Drlg. 1,500 ft.

Bradford et al's No. 1 E. R. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, H.&T.C. Sur... Location.

**L. G. Bradstreet et al's No. 1 Lee Monroe, 2,310 ft. from NE and 330 ft. from SE lines of Sec. 77, Blk. 34, H.&T.C. Sur.** ..... S.D. 1,037 ft.

California Oil Co.'s No. 2 D. Burgin, 1,550 ft. from SW line, 2,310 ft. from SE lines of Sec. 15, H.&T.C. Sur... Flowed 330 bbls.; T.D. 2,539 ft.

**California Oil Co.'s No. 8 York, 990 ft. from N and 2,310 ft. from SW of Sec. 10, Blk. 34, H.&T.C. Sur.** .. Set csg.; T.D. 2,335 ft.

C. C. Duffey et al's No. 1 Llano-Sloan, 1,650 ft. from NW and NE lines of Sec. 24, H.&T.C. Sur. ..... Lost tools; to skid rig.

Eppenauer Drlg. Co.'s No. 1-D Combs, 438 ft. from SE and 1,326 ft. from SW, Blk. 4, J. W. Hollingsworth Sur. ..... Rigged up and S.D.

Farrell & Co.'s No. 3 John B. Bennett, 1,650 ft. from SE line, 330 ft. from NE line of Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,275 ft.

Gulf Prod. Co.'s No. 30 Hutchins, 990 ft. from S line and 330 ft. from W line of Sec. 4, Blk. F, G.M.M. B.&A. Sur. ..... Drlg. 1,000 ft.

Gulf Prod. Co.'s No. 47 O'Brien, 330 ft. from E and 990 ft. from S, Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 1,700 ft.

Gulf Prod. Co.'s No. 48 O'Brien, 990 ft. from E line and 990 ft. from S line of Sec. 17, Blk. F, G.M.M.B.&A. Sur. ..... Rig up.

Humble Oil & Ref. Co.'s No. 3 Richter, 2,316 ft. from NE line and 1,698 ft. from SE line of Sec. 27, Blk. 34, H.&T.C. Sur. ..... S.D. 2,530 ft.

Postelio & Caprito's No. 1 Purcell, 330 ft. from NE and 990 ft. from NW, Sec. 17, Blk. 34, H.&T.C. Sur. ..... Rig up.

Rector Oil Co.'s No. 1 Lee Monroe, 660 ft. from NE and 660 ft. from SE of Sec. 62, Blk. 33, H.&T.C. Sur... S.D. 4,661 ft.

Sid Richardson's No. 1 Lee Monroe, beginning at the NE cor. of J. W. Hollingsworth Sur. No. 4, thence 440 ft. SE, thence NE 430 ft., J. W. Jackson Sur. No. 55 ..... Rig up.

Sinclair Prairie Oil Co.'s No. 5 Archenhold, 2,310 ft. from SE and 2,310 ft. from SW of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,970 ft.

Tex-Mex Pet. Corp.'s No.2-D Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,460 ft.

Westex Oil Co.'s No. 1 Cynthia Monroe et al, 330 ft. from SE and 330 ft. from SW lines of NE 80 acres of Sec. 2, J. V. Borders Sur. ..... S.D. 2,658 ft.

**WINKLER COUNTY**

McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur.... Drlg. 2,905 ft.; no report.

Magnolia Pet. Co.'s No. 6 Scarborough, 1,650 ft. from S line and 330 ft. from W line of Sec. 4, Blk. 22-C, P.S.L. Sur. ..... Drlg. 1,290 ft.

Magnolia Pet. Co.'s No. 7 Scarborough, 1,650 ft. from N line and 990 ft. from E line of Sec. 18, Blk. 7, P.S.L. Sur. ..... Drlg. 640 ft.

Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 190 ft. from S. Sec. 1, Blk. 22-C, P.S.L. Sur. .... Moving in machine.

Richardson's No. 4 Scarborough, 330 ft. from N line and 2,310 ft. from W line, Sec. 18, Blk. 174, P.S.L. Sur. .. Drlg. 2,330 ft.

Richardson's No. 5 Scarborough, 150 ft. from S line and 1,740 ft. from W line of Sec 1, Blk. C-22, P.S.L. Sur. ..... Drlg. 3,024 ft.

Sinclair Prairie Oil Co.'s No. 2-C State-Scarborough, 102 ft. N and 1,650 ft. W of NE cor. of Sec. 1, Blk. 77, P.S.L. Sur. ..... Cleaning out; T.D. 3,027 ft.

Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 102 ft. from the N line, 1,650 ft. from E line, Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 1,845 ft.

## Wildcat Operations in Texas Panhandle

**Week Ending July 2**

**CARSON COUNTY**

| Company, well, farm name, section and block— | Remarks: |
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| **Empire Gas & Fuel Oil Co.'s No. 1 C. S. Seiber, 1,326 ft. from E line, 330 ft. from S line of SE Sec. 10, Blk. 7, I.&G.N. Sur.** | Drlg. 861 ft. |
| Hagy et al's No. 2 Bernard, C NE SE Sec. 44, Blk. 4, I.&G.N. Sur. | Location. |
| Hagy et al's No. 1 Sullivan, C NW Sec. 44, Blk. 4, I.&G.N. Sur. | Location. |
| **Stanolind O. & G. Co.'s No. 2 L. C. McConnell, 330 ft. from N line, 330 ft. from W line, E½ SW Sec. 187, Blk. 3, I.&G.N. Sur.** | Fishing 3,065 ft. |
| Texas Co.'s No. 2 E. Cooper, 330 ft. from S line, 330 ft. from W line, S½ Sec. 6, Blk. 9, I.&G.N. Sur. | Drlg. 2,400 ft. |

**CHILDRESS COUNTY**

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| **Humble Oil & Ref. Co.'s No. 1 B. P. Smith, 1,327 ft. from S line and 1,327 ft. from E line of Sec. 27, H.&G.N. Sur., Blk. 9** | Fishing 3,800 ft. |

**DALLAM COUNTY**

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| **Eben Warner's No. 1 Jarbie, 1,520 ft. from S line, 415 ft. from W line, Sec. 2, B.&B. Sur.** | Fishing 3,200 ft. |

**GRAY COUNTY**

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| **Anderson & Bean's No. 3 J. C. Vollmert, 330 ft. from S line, 330 ft. from E line, SW Sec. 140, I.&G.N. Sur., Blk. 3** | Cellar. |
| **Ben Golding et al's No. 1 Massay, 330 ft. from W line of the E 40 ac. of S 80 ac. of the W 120 ac. of the N½ Sec. 41, Blk. 25, H.&G.N. Sur.** | Set csg.; T.D. 2,240 ft. |
| **Cambrian Oil Co.'s No. 2 L. H. Webb, 990 ft. from N line, 330 ft. from E line of E½ NE Sec. 62, Blk. 25, H.&G.N. Sur.** | T.D. 2,610 ft.; 1,400 ft. of oil in hole. |
| **Continental Oil Co.'s No. 8 Finley-Brown, 990 ft. from E, 330 ft. from S line, Sec. 32, Blk. B-3, H.&G.N. Sur.** | Drlg. 3,045 ft. |
| **Champlin Ref. Co.'s No. 7-D J. McLaughlin, 990 ft. from W line, 330 ft. from N line of NE Sec. 33, H.&G.N. Sur., Blk. 2-B** | S.D. 3,120 ft. |
| **Dixon Creek O. & R. Co.'s No. 1 E. G. Barrett, 330 ft. from N line, 330 ft. from E line of 13-ac. tract in the SE cor. Sec. 127, Blk. 3, I.&G.N. Sur.** | S.D. to test; T.D. 3,279 ft. |
| **Dixon Creek Oil Co.'s No. 1 Benedict, 330 ft. from S and 330 ft. from W, Sec. 114, Blk. 3, I.&G.N. Sur.** | S.D. 668 ft. |
| **Gulf Prod. Co.'s No. 5 Ellis Cockrell, 330 ft. from N and E lines, S½ Sec. 2, Blk. M-21, T.C.R.R. Sur.** | Location. |
| **Hoffman Oil Co.'s No. 1 D. M. Massey, 330 ft. from S line, 330 ft. from E line of 40-ac. of W 20 ac. of Sec. 41, H.&G.N. Sur., Blk. 25** | Spudded and S.D. |
| **Johnson et al's No. 1 Thut, 330 ft. from N and 150 ft. S of S. A. Zweig** | Drlg. 340 ft. |
| **Niapa Oil Corp.'s No. 1 Cole, 330 ft. from S and 330 ft. from W, Sec. 104, Blk. 3, I.&G.N. Sur.** | Moving in. |
| **Shell Pet. Corp.'s No. 2 B. E. Finley, 1,231 ft. from E line, 150 ft. from S line of N 479 acres of Sec 17, B. E. Chaney Sur.** | Prep. to test; T.D. 3,098 ft. |
| **Skelly Oil Co.'s No. 6 W. C. Heaston, 330 ft. from N line, 330 ft. from W line of N½ NE Sec. 164, Blk. 3, I.&G.N. Sur.** | Testing; T.D. 3,308 ft. |
| **Southwest Prod. Co.'s No. 1 T. Cobb, 1,320 ft. from S line, 990 ft. from E line, NE Sec. 184, Blk. 3, I.&G.N. Sur.** | Drlg. 1,790 ft. |
| **Stanolind O. & G. Co.'s No. 3-C W. E. Cobb, 1,320 ft. from E line, 330 ft. from S line of SE Sec. 165, Blk. 3, I.&G.N. Sur.** | Swbd. 160 bbls. in 12 hrs.; T.D. 3,315 ft. |
| **Stanolind O. & G. Co.'s No. 1-B W. E. Cobb, 330 ft. from N line, 330 ft. from E line of SW Sec. 165, Blk. 3, I.&G.N. Sur.** | Drlg. 3,085 ft. |
| **Texwell Oil Co.'s No. 1 J. C. McConnell, 330 ft. from S line, 330 ft. from W line, SW SW Sec. 174, Blk. 3, I.&G.N. Sur.** | Set csg.; T.D. 2,643 ft. |

**HUTCHINSON COUNTY**

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| **Badger Oil Co.'s No. 6 Lewis, 330 ft. from S line, 330 ft. from E line, SE Sec. 8, Blk. 25, B.S.&F. Sur.** | Drlg. 1,400 ft. |
| **Brownie Oil Co.'s No. 1 Ware, 330 ft. from N and 330 ft. from W, Sec. 124, Blk. 4, I.&G.N. Sur.** | Bldg. rig. |
| **Huber Petroleum Co.'s No. 2-A J. F. Weatherly, 990 ft. from S line and 330 ft. from W line of E half SE Sec. 26, A.&B. Sur., Blk. Y** | Drlg. 3,015 ft. |
| **Harry Stekol's No. 1-G J. A. Whittenburg, 330 ft. from W line, 990 ft. from N line, Sec. 89, G.C.&S.F. Sur., Blk. 3, but located in Hannah Prewitt Sur. No. 3** | Testing 3,086 ft. |
| **Ortex Oil Co.'s No. 1 N. A. Steinson, 930 ft. from N line, 390 ft. from E line of Sec. 7, T.C.R.R. Sur.** | R.U. standard tools; T.D. 1,515 ft. |
| **Phillips Pet. Co.'s No. 3 A. Yake, 7,553 ft. from N line, 330 ft. from W line, Sec. 36, H.&T.C. Sur., Blk. 47** | Drlg. 975 ft. |
| **Texas Co.'s No. 1 W. E. Herring, 1,200 ft. from E line, 1,200 ft. from N line of W 1,594 acres of the E. Almaguire Sur.** | Standardizing 2,634 ft. |
| **Trippiehorn Bros.' No. 2 R. C. Ware, 330 ft. from E line and 990 ft. from S line of E half NE Sec. 123, Blk. 4, I.&G.N. Sur.** | C.O. after shot; T.D. 3,170 ft. |

**KNOX COUNTY**

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| **C. C. Christie's No. 1 Moore, Sec. 87, Blk. 45, H.&T.C. Sur.** | Location. |

**MOORE COUNTY**

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| **Phillips Pet. Co.'s No. 2 J. C. Wilson, Sec. 157, Blk. T-3, T.&N.O. Sur.** | Reaming 3,314 ft. |

**WHEELER COUNTY**

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| **Alma Pet. Co.'s No. 1-B Johnson, 330 ft. from N line, 330 ft. from W line, W½ NE Sec. 47, Blk. 25, H.&G.N. Sur.** | S.D. 2,203 ft. |
| **Bowers & Carver's No. 1 L. B. Sims, 330 ft. from N line, 330 ft. from E line of SW SE Sec. 60, Blk. 17, H.&G.N. Sur.** | S.D. 1,200 ft. |
| **Dumar Oil Co.'s No. 1 E. F. Bell, 660 ft. from S line, 660 ft. from E line, SW Sec. 73, Blk. 23, H.&G.N. Sur.** | Drlg. 1,781 ft. |
| **Dyke Oil Co.'s No. 1 G. W. Sitter, 330 ft. from N line, 330 ft. from E line, N½ NW Sec. 28, Blk. 24, H.&G.N. Sur.** | Rig up. |
| **Dumar Oil Co.'s No. 1 J. W. Grogan, 660 ft. from N line, 660 ft. from W line of N½ NW Sec. 57, Blk. 23, H.&G.N. Sur.** | Drlg. 1,495 ft. |
| **Mid-Continent Pet. Corp.'s No. 6 J. S. Carwile, 990 ft. from N line, 990 ft. from E line of NE Sec. 51, H.&G.N. Sur., Blk. 24** | Set csg.; T.D. 2,231 ft. |
| **Myers & Kennedy's No. 1 Harvey, 660 ft. from S and E lines of NW Sec. 67, Blk. 13, H.&G.N. Sur.** | S.D. 2,226 ft.; to test. |
| **Shell Pet. Corp.'s No. 1 Bush, 330 ft. from N line, 330 ft. from E line, N½ NE Sec. 48, Blk. 24, H.&G.N. Sur.** | S.D. for P.L. construction; T.D. 2,493 ft. |
| **Smith Bros.' No. 1 A. Plummer, 330 ft. from N line, 330 ft. from E line, N½ SW Sec. 45, Blk. 24, H.&G.N. Sur.** | Drlg. 2,305 ft. |
| **Smith Bros.' No. 2 R. L. Harlan, 330 ft. from N line, 660 ft. from E line, NW Sec. 49, H.&G.N. Sur., Blk. 24** | Drlg. 1,320 ft. |
| **Texas Co.'s No. 1 P. M. Keeler, 330 ft. from N line, 330 ft. from W line, NW Sec. 48, Blk. 24, H.&G.N. Sur.** | T.D. 2,365 ft.; tested 64,000,000 ft. of gas from 2,328-62 ft. |

# North Pettus Continues Most Active Spot With Three Completions Reported During Week

SAN ANTONIO, Tex., July 2. — The North Pettus area, which includes parts of Bee, Goliad and Karnes Counties, continues to be one of the most active spots in the Southwest Texas district. With three completions during the week, one well on top of the sand, and several tests nearing their critical depths, the area continued to hold the interest of the Southwest Texas operators.

Magnolia Petroleum Co.'s No. 3 Porter, an offset to Weinert's No. 1 Smith producer, was completed for 285 bbls. daily through twenty-five-sixty-fourths-inch choke and showed 600 pounds pressure on casing and 200 pounds working pressure on tubing. The well had the Pettus sand from 3,666-74 feet, total depth. Houston Oil Co.'s No. 1 Neihaus, 660 feet west of Magnolia's No. 1 Scarborough, was completed for 20,000,000 feet of gas daily with 5 bbls. of distillate. It had sand from 3,644-49 feet. Magnolia Petroleum Co.'s No. 2 Scarborough, an east offset to Houston Oil Co.'s No. 1-B Neihaus, drilled sand from 3,634-41 feet and was estimated good for 200 to 300 bbls. daily. Sun Oil Co.'s No. 1 Scarborough, southwest of Weinert's No. 1 Smith, topped sand at 3,647 feet and at last report was waiting on cement at 3,652 feet. Houston Oil Co.'s No. 1-A Neihaus, a north offset to No. 1, was drilling at 3,127 feet. Houston's No. 2-B Neihaus was drilling at 2,575 feet. Jim Kendricks and J. W. O'Byrne's No. 1 Runge State Bank, about a mile northeast of the Weinert Smith producer, was drilling at 2,900 feet. Weinert's No. 2 Grady Smith, 660 feet northeast of the No. 1 producer, was shut down at 2,505 feet. Magnolia Petroleum Co.'s No. 4 Porter, an offset to Sun Oil Co.'s No. 1 Scarborough, was drilling at 1,550 feet. Four other wells in the area were getting ready to start and will probably be drilling early in the week.

### Bee County

About 7 miles northwest of Pettus and in the Hodge Survey, Bee County, Dash Production Co.'s No. 2 Ruhman, was shut down waiting orders at 3,116 feet. On a drill stem test from 3,078-3,116 feet it showed salt water with a show of oil. About 2 miles southwest of Tuleta, Dirks Brothers' No. 1 Mrs. William Rapp, in the Uranga grant, was spudding. Phillips Petroleum Co.'s No. 1 Morgan, in the Eyles Survey, was coring at 6,220 feet. About 5 miles southeast of Beeville, Heep Oil Co.'s No. 1 J. C. Wood, in the F. Crane Survey, was drilling after testing salt water at 4,300 feet. The 7-inch casing was set at 4,178 feet. Howeth & Swiger were rigging up for No. 1 Marie Schramm estate, a 4,400-foot test to be drilled about 3 miles west of Papalote and 4 miles south of Skidmore, in the Hugh O'Brien Survey.

### Angelita Area

In the Angelita area of San Patricio County, Circle W Oil Co.'s No. 1 Welder, bottomed hole at 5,373 feet and at last report the well was cleaning itself and showing 1,250 pounds tubing pressure and 1,650 pounds casing pressure. It topped sand at 5,355 feet and cored to 5,370 feet and showed 250 pounds pressure on a test. On another test from 5,200-5,355 feet it showed 700 pounds pressure with no oil or water. If this test is completed for a good well it will be the second producer in the field. The area has only two other active tests, Atkins-O'Neil and Continental Oil Co.'s No. 2 Welder, drilling below 200 feet and same operators' No. 1-A Welder, waiting on cement at 1,000 feet.

At Sinton in San Patricio County the Plymouth Oil Co.'s No. 2-A Welder, was drilling 4,675 feet. No. 1-B Welder, 3,500 feet northwest of No. 1-A, was drilling at 2,255 feet.

### Frio County

In Frio County, Amerada Petroleum Corp.'s No. 2 Halff & Oppenheimer, about 4 miles southwest of Pearsall, was bailing estimated one-half barrel of 35.4 gravity oil per hour and estimated good for 500,000 feet of gas daily with total depth of 6,098 feet. It is also reported bailing some sulphur water. At the present total depth it is 108 feet in the Edwards lime.

### Hidalgo County

In the southeastern part of Hidalgo County, Union Sulphur Co.'s No. 1 American Rio Grande Land & Irrigation Co., about 7½ miles north of Mercedes, was drilling 6,431 feet in sandy shale and lime. Rogers and others' No. 1 Fairbanks, about 7 miles south of McAllen, was drilling 150 feet.

### Starr County

About a mile south of production in the Las Cuevitas Pool in Starr County, Sun Oil Co.'s No. 6-C Guerra was drilling at 3,160 feet. Sun's No. 1-E Guerra & Sons, north of production and across the line in Jim Hogg County, was drilling at 3,150 feet with nothing of importance yet encountered. Sun Oil Co. tank crews expect to complete the 118,000-bbl. storage tank in the field during the next week for a 30-day open flow test of nine Sun Oil Co. producers in the Las Cuevitas Survey.

North of the Jeffries Lambeth area in central Starr County, Weekley Oil Corp.'s No. 1 M. M. Garcia was drilling at 2,912 feet. The well cored three sands already producing in the Jeffries Lambeth area. It had a slight show of gas in sandy shale at 2,350 feet and had two sands between 2,448-75 feet, both of which showed oil and salt water on drill stem tests. About 3 miles north of the Jeffries Lambeth area, Jim Cloud's No. 1 J. Rodriquez had set surface casing. It is in Share 35, Porcion 88, Ancient Jurisdiction of Camargo. West of the area and in Block 24, Porcion 89, Smith-Tex Oil Co.'s No. 1 Starr County Cattle Co. was drilling below 2,100 feet.

About 17 miles north of Roma, J. G. Buell's No. 1 Guerra, in Survey 10, Starr County, was shut down at 1,812 feet. In the northern part of the county Circle W Oil Co.'s No. 1 Block had spudded and set surface casing.

### Webb County

Near Bruni in Webb County, United Production Co.'s No. 2 Bruni, had sand at 2,268-78 feet and showed good for a large gasser and has since drilled sand at 2,538-51 feet, where it sprayed oil through the tester, and when the drill pipe was broken down it recovered four fourbles of clean oil. The well will probably be completed in this sand. In the northeastern part of the county, Gohlson's No. 1 Yeager, in Survey 346, has been abandoned as dry with total depth of 1,500 feet.

### Karnes County

In southeastern Karnes County, Ray's No. 2 Radford in the M. Nichols Survey, about 4 miles north of the North Pettus Field, drilled sand at 3,581-85 feet, but late in the week operators were still unable to get a satisfactory drill stem test.

### Government Wells

The Government Wells Field marked up five completions during the week. Magnolia Petroleum Co.'s No. 3 Hahl-Southland was completed for 10 bbls. per hour through a quarter-inch choke at 2,284 feet. Reynosa Oil Co.'s No. 6-D Duval was completed for 500,000 feet of gas with 500 pounds rock pressure at 1,595 feet. Russ and others' No. 1 Hahl was completed for 50 bbls. daily at 2,306 feet. J. D. Clair Smith's No. 1 Curry, bottomed hole at 2,365 feet and was jetting 5 bbls. per hour. Texas Co.'s No. 11 Duval drilled to a total depth of 2,325 feet and made 25 bbls. per day on pump.

### Real County

H. J. Hartwell Drilling Co.'s No. 2 L. J. Haby, about 12½ miles northwest of Leakey in Real County, was drilling lime at 2,540 feet.

### Duval County

In Duval County and about 5 miles south of San Diego, Sun Oil Co.'s No. 1 Moreno, in Section 540, H.&W. Survey No. 537, was reaming with a total depth of 5,513 feet. It topped the Jackson at 4,940 feet. J. R. Moore's No. 1 W. R. Peters, in Section 36, has been abandoned with total depth of 2,525 feet.

### Nueces County

Two wells were completed in the Agua Dulce area of Nueces County during the past week. Clymore Production Co.'s No. 1-B J. C. Ingram, bottomed hole at 4,810 feet and was completed for 95 bbls. per day through a quarter-inch choke with 1,800 pounds tubing pressure and 1,900 pounds casing pressure. Clymore Production Co.'s No. 1-D J. C. Ingram drilled to 4,790 feet and made 100 bbls. daily. Benedum & Trees' No. 1 Bickham, in the J. Farras Survey, Block 9, was drilling at 5,900 feet. Near Robstown, Diadem Oil Co.'s No. 1 J. C. Mayo was preparing to abandon with a total depth of 5,816 feet.

### Bastrop County

North of the Yost Field in Bastrop County, McGahan & Vogal's No. 1 W. P. Watts, in the J. W. Bunton Survey, has been abandoned with a total depth of 2,182 feet. It topped the Buda at 1,867 feet, had top of Del Rio at 1,918 feet, topped Georgetown at 1,960 feet and encountered top of Edwards lime at 2,119 feet. N. Pennett's No. 1 Carroll, in the Mays Survey, was drilling at 2,260 feet. It topped Serpentine at 2,242 feet and had a show of oil from 2,238-42 feet.

### Caldwell County

Caldwell County marked up two abandonments during the past week. Hinton & Dodson's No. 1 Addie Smith, about 6 miles south of Lockhart, was abandoned with total depth of 3,036 feet. J. E. Seiber, trustee's No. 1 Blackwell, in the J. D. Rains Survey, about 9 miles south of Lockhart, was abandoned with total depth of 2,944 feet.

### McMullen County

W. H. Kennon's No. 2 Lark, in the Schrugham Survey, McMullen County, has been completed for 25 bbls. daily on pump. It had sandy shale from 1,034-58 feet, which is the total depth. C. C. Shumway's No. 6 Shiner, in Section 62 of the Shumway Subdivision, was shut down at 1,755 feet. It had the first Government Wells sand at 1,689-1,726 feet which showed salt water and the second Government Wells sand from 1,740-55 feet. In the Jacob Pool of McMullen County, C. R. Kennon's No. 1 Lark, was completed for 15 bbls. daily after plugging back to 1,055 feet. The well was formerly drilled to 1,072 feet.

### Travis County

About 2 miles north of Kimbrough, in Travis County, Humble Oil & Refining Co.'s No. 1 P. C. Wells, in the James P. Kemp Survey, was drilling dry Serpentine at 905 feet.

## Wildcat Operations in Southwest Texas

**Week Ending June 30**

**BANDERA COUNTY**

| Company, well, farm name, section and block— | Remarks |
|---|---|
| Parkford et al's No. 1 Mrs. R. L. Duke, G.H.&S.A. Sur., Sec. 7 | Material. |
| Peerless O. & G. Co.'s No. 1 Garrison Sur. No. 506. 1,500 ft. from N and 2,700 ft. from E lines of Sur. (8 mi. SW of Medina) | Spud. |

**BASTROP COUNTY**

| | |
|---|---|
| Marts & Beavens' No. 1 Davenport, 2,600 ft. NW line, 3,550 ft. SW line in Thos. Garratson Sur., 1 mile SE of Elgin | Coring 2,275 ft. |
| McGahan & Vogel's No. 1 W. P. Watts, 150 ft. SE line, 750 ft. SW line of 75-ac. tract in J. W. Burton Sur. N of Yoast Field | T.D. 2,182 ft.; abd. |
| N. Pennett's No. 1 Carroll, 330 ft. NW line, 990 ft. SW line of 40-ac. tract in Mays Sur. | Drlg. 2,260 ft.; S.O. 2,238-42 ft. |

**BEE COUNTY**

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|---|---|
| Caesar Oil Co.'s No. 1 R. E. Miller, F. Lewis Sur. | T.D. 60 ft.; T.A. |
| Caesar Oil Co.'s No. 1 Pulling Est., F. Lewis Sur. | Rigging up. |
| Dash Prod. Co.'s No. 2 Ruhman, 888 ft. from SW line and 2,113 ft. from SE line of Hodge Sur. | T.D. 3,116 ft.; waiting orders. |
| R. A. Davids' No. 1 Baptist Church, center of 3-ac. church lot, or 150 ft. E of N line of Pullin est., 27-ac. tract in F. Lewis Sur. | Rigging up. |
| Dirk Bros.' No. 1 Mrs. Wm. Rapp, 990 ft. E line, 1,650 ft. S line of SE Sec. 5, Uranga grant, 3,300 ft. NE of Skinner's No. 1 | Spud. |
| Falvey et al's No. 1 Gardner, 330 ft. out of NE cor. of Gardner tract | Location. |
| R. H. Feltner et al's No. 1 Theis, 2,376 ft. E line, 990 ft. S line of 1,034-ac. tract, or 3,640 ft. E line and 3,070 ft. N line of Castro Rivers Sur. | Spudded and S.D. |
| Heep Oil Co.'s No. 1 J. C. Wood, 466 ft. from N and E lines of F. Crane Sur. | T.D. 4,717 ft.; P.B. to 4,201 ft.; tested S.W. 4,300 ft; drlg. ahead. |
| Houston Oil Co.'s No. 1 Neihaus, 660 ft. W of Magnolia's No. 1 Scarborough | T.D. 3,649 ft.; comp. 20,000,000 ft. gas and 5 bbls. distillate day. |
| Howeth & Sivigers' No. 1 Marie Schramn est., 2,332 ft. from W line, 466 ft. from N line of the Schramn 150-ac. tract in Hugh O'Brien Sur., 4,400-ac. block | Rigging up. |
| Albert Jeanes' No. 1 G. L. Courtney, 1,600 ft. from E line, 330 ft. from S line of tract, G. A. Kerr Sur., 1¼ miles NE of Pettus | Rigging up and S.D. |
| Magnolia Pet. Co.'s No. 2 Scarborough, E offset to Houston's No. 1-B Neihaus | T.D. 3,641 ft.; sand 3,634-41 ft.; est. 300 bbls. |
| McLain et al's No. 2 Laura Weiss, B.&B. Sur., 660 ft. E of No. 1 | T.D. 100 ft.; prep. to start up. |
| Phillips Pet. Co.'s No. 1 Morgan, 4,950 ft. from W. 1,270 ft. from N lines of 12,936-ac. tract, Eyles Sur. | Coring 6,220 ft. |

(Continued on Next Page)

## Wildcat Operations in Southwest Texas

(Continued from Preceding Page)

Worth Oil Co.'s No. 1 Rutledge, 1,000 ft. from N line and 300 ft. from E line of A. Hadley Sur. ..... Rigged up and S.D.

**BEXAR COUNTY**

Berry-Hays et al's No. 1 City, 450 ft. N line and 750 ft. E line of 175-ac. tract ..... T.D. 845 ft.; flowing sulphur wtr.

A. M. Blume's No. 1 H. A. Ridder, E offset to Blume's No. 2 Ridder, J. M. Barrera Sur. ..... Derrick blew down.

A. M. Blume's No. 2 Louis Ridder, approximately 2,350 ft. N of R.R., 700 ft. E of W line of J. M. Baarera Sur. No. 58 ..... T.D. 1,630 ft.; P.B. to test 1,430 ft.; W.O.C.

A. M. Blume's No. 3 Ridder, 2,500 ft. S line, 3,500 ft. W line of SW cor. of Munroe Sur., in J. M. Barrera Sur. ..... T.D. 340 ft.; W.O.C.

J. G. Bowles' No. 1 Dillon, 750 ft. from road on E and 4,750 ft. from S line of survey, Manuel Delund Sur. ..... Drlg. rock 1,020 ft.

Dingman & Russell's No. 1 R. J. Coffey, 1,328 ft. from SE line, 1,686 ft. from SW line of 420-acre tract in Rodrigues Sur. ..... T.D. 1,326 ft.; P.B. 1,017 ft.; S.D.

Keiffer et al's No. 1 Ruiz, SE cor. of 82-ac. tract in F. Rowland Sur. No. 48 ..... T.D. 1,715 ft.; S.D.

S. E. Gantt's No. 1 A. B. Stephen, 2,650 ft. from SW line, 740 ft. from SE line of P. W. Hays Sur. ..... T.D. 452 ft.; S.D.

Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 300 ft. from E line of tract in J. Ward Sur. ..... T.D. 500 ft.; S.D.

George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6 ..... T.D. 1,425 ft.; S.D.

J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munos Sur. No. 151 ..... T.D. 1,940 ft.; S.D.; made salt wtr. and some oil.

Medina Oil Co.'s No. 1 G. W. Hendrickson, 300 ft. W line, 700 ft. S line of 103-ac. tract, or 1,100 ft from W line and 13,150 ft. S line of survey, in C. A. Yoakum Sur. ..... T.D. 574 ft.; S.D.

Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodrigues Sur. ..... T.D. 1,315 ft.; standing.

Schneider & Reese's No. 1 Claussen ..... S.D. 1,675 ft.

C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 982 ft.; show of oil and gas from 968-82 ft.; W.O.C.

**CALDWELL COUNTY**

S. S. Cargill's No. 3 Damereau, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur. ..... Top Edwards 2,260 ft.; show oil reaming 2,262 ft.

Wilford Keen et al's No. 1 Wm. Ewalk, 150 ft. from E line and 150 ft. from N line of 126-ac. tract, or 2,650 ft. from N and 1,900 ft. from E lines of Jas. George Sur. (1¼ mi. from Lockhart) ..... T.D. 2,228 ft.; S.D.

Hinton & Dodson's No. 1 Addie Smith, 750 ft. SW line, 1,750 ft. NW line of Sam Shupe Sur., 6 miles S of Lockhart ..... Top chalk 2,564 ft.; T.D. 3,036 ft.; abd.

M. C. Moore's No. 1 Lackey, 440 ft. NW line, 150 ft. NE line of Lackey's 193.75-ac. tract, or 450 ft. NW line and 2,600 ft. NE line of Damon Sur. ..... T.D. 825 ft.; S.D.

Morgan & Seagraves' No. 1 Blackwell, 862 ft. from creek on E line and 150 ft. S of Blackwell's 90-ac. tract in J. D. Rains Sur. ..... T.D. 2,944 ft.; abd.

Wagner, Daniels & Stierene's No. 1 S. M. Blackwell, 4,350 ft. SW line, 1,500 ft. SE line of tract and survey in John Roe Sur. ..... Drlg. shale 450 ft.

**DEWITT COUNTY**

Keystone Royalties' No. 1 L. T. Burns, 1,100 ft. from W and 660 ft. from S line of 303-ac. tract in L. G. Belcher Sur. ..... Drlg. 1,928 ft.

**DUVAL COUNTY**

Beer & Lewis' No. 1 Petera Sur. 27 ..... Spud and S.D.

Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 920-ac. tract in Francisco grant ..... Drlg. 3,105 ft.

Dr. J. H. Butte et al's No. 1 Tom Graham, 1,122 ft. N line, 3,375 ft. W line, Sec. 572, E. line of county and N line of San Diego ..... Location.

Chiquita's No. 2 Richardson, 250 ft. N and W line of survey and block, in Blk. 3, Sur. No. 3 ..... Drlg. 1,110 ft.

Continental Oil Co.'s No. 2-A Clara, Driscoll Sevier, 3,675 ft. S and 1,000 ft. from E line of Sec. 448 ..... T.D. 699 ft.; W.O.C.

Cox & Hamon's No. 1 State ..... S.D. 400 ft.

Frank Gravis' No. 1 Hubbard, 960 ft. S line, 330 ft. W line of B.S.&F. Sur. No. 83 ..... Derrick.

K. F. Hasselimann's No. 1 Mooey, 330 ft. N and W lines of S½ SW of Sur. 60 ..... T.D. 2,377 ft.; sand 2,365-77 ft.; last 3 ft. showed oil.

W. C. McBride's No. 1 Hagist, 330 from N and E lines of SE 80 ac. of Sec. 1 ..... Location.

J. R. B. Moore's No. 1 W. R. Petera, Survey 36 ..... T.D. 2,525 ft.; abd.

O'Byrne & Jennings' No. 1 Benavides, 3,734 ft. from S cor. and 330 ft. from W line at right angles, Sur. 355 ..... Spud and S.D.

Russ et al's No. 1 Hahl, 330 ft. from N and W lines of W½ NW Sur. No. 62 ..... T.D. 2,308 ft.; comp. 50 bbls. day.

Sun Oil Co.'s No. 1 Moreno, 330 ft. from E line and 2,000 ft. from S line of NW cor. of H.&W. Sur. 537, in Sec. 540 (5 mi. S of San Diego) ..... T.D. 5,513 ft.; reaming.

J. D. Clair Smith's No. 1 Curry, 330 ft. from S and W lines of N½ SW Sur. 62 ..... T.D. 2,365 ft.; comp. 5 bbls. hr., jetting.

Witherspoon et al's No. 1, Richardson Sur. No. 5 ..... T.D. 1,005 ft.; S.D.

Louis Yeager's No. 1 Yeager, 694 ft. from W line, 1,527 ft. from S line of Sur. No. 38 ..... T.D. 865 ft.; S.D.

**FRIO COUNTY**

Amerada Pet. Co.'s No. 2 Halff & Oppenheimer, begin. at most easterly N cor. of John H. Gibson Sur. No. 16, thence SE along NE line of Sur. 2,109 ft., thence SW at right angles 800 ft. (4 mi. SW of Pearsall) ..... T.D. 6,041 ft.; showing 500,000 ft. gas and ½ bbl. oil per hr.

**GILLESPIE COUNTY**

Dorre et al's No. 3 Lindig ..... T.D. 262 ft.; S.D.

Powers et al's No. 2 Lindig, 12,700 ft. from S line, 1,333 ft. from W line of Maria Josephine Guerrera Sur. ..... Location.

**GOLIAD COUNTY**

Duval Oil Corp.'s No. 1 Lucy Borden, 330 ft. NE cor. of 124-ac. tract in Alberto Guitterez Sur., 1½ miles W of Charco ..... Location.

Jane Oil Co.'s No. 2 Grady Smith, 990 ft. SW lines of B.&B. Sur., 330 ft. SE line of Magnolia's 504-ac. tract ..... T.D. 210 ft.; W.O.C.

Jim Kendricks & J. M. OByrne et al's No. 1 Runge State Bank, 330 ft. from NW line and 330 ft. from SW line of 142-acre tract ..... Drlg. 2,900 ft.

H. H. Weinert's No. 2 Gracy Smith, 660 ft. NE of No. 1, B.&B. Sur. ..... T.D. 2,505 ft.; S.D.

Magnolia Pet. Co.'s No. 3 Porter, 660 ft. NW of Weinert's No. 1 Grady Smith ..... T.D. 3,674 ft.; comp. 285 bbls. day through 25/64-in. choke; 600 lbs. pressure on csg.; 200 lbs. W.P. on tubing.

Oceanic Pet. Co.'s No. 1 Fromme, 1,500 ft. S line, 1,200 ft. W line of 62-ac. tract in P. D. Dexter Sur., 10 miles N of Goliad ..... Derrick.

Sun Oil Co.'s No. 1 Scarborough, 660 ft. SW of Weinert's No. 1 Smith ..... T.D. 3,652 ft.; W.O.C.; top sand 3,647 ft.

**GONZALES COUNTY**

Weinert et al's No. 1 Aug. Kallis, in Aug. Kallis' 150-ac. tract, just over Guadalupe County line in Gonzales County, 3,450 ft. N of river and in center of tract in Ira Mash Sur. ..... Location.

**GUADALUPE COUNTY**

Diamond Half Oil Co.'s No. 1 H. A. Ball, 3,000 ft. NE line and 3,500 ft. SE line of L. H. Peters Sur., 3 miles SW of Pequin ..... T.D. 40 ft.; W.O.C.

**HIDALGO COUNTY**

D. D. Oil Co.'s No. 1 Mrs. L. George, 330 ft. from N and W lines of 40-ac. tract in Share 13, Porcion 41. ..... Location.

Davis & Harrison's No. 1 Lula George, 300 ft. from S and 700 ft. from E lines of Tract 13, Porcion 41, Ancient Jurisdiction of Reynosa ..... T.D. 3,260 ft.; S.D.

Rogers et al's No. 1 Fairbanks, 7 miles S of McAllen ..... Drlg. 160 ft.

Otto Woods' No. 1 John Lawrence, 530 ft. from W, 300 ft. from N line of Tract 274, Porcion 39, Ancient Jurisdiction of Reynosa ..... T.D. 2,063 ft.; S.D.

Union Sulphur Co.'s No. 1 American Rio Grande L. & I. Co., 400 ft. S and W of NE cor. of Lot 229, Blk. 59 (½ mi. N of Mercedes) ..... Drlg. sandy shale and lime 6,431 ft.

**JIM HOGG COUNTY**

Santa Clara's No. 1 W. W. Jones, 6,100 ft. from N line, 1,700 ft. from W line of Share 27, cor. of Blk. No. 111, in the Hino Jose grant ..... Spud.

W. G. French's No. 1 T. T. French, 5,700 ft. S line, 3,260 ft. W line of grant, or cor. of Blks. 67 and 68 in the Los Moritos grant ..... Location.

Sun Oil Co.'s No. 1-E Guerra & Son, 3,500 ft. N of county line along the E line of W 2,000-ac. tract and 660 ft. at R/A ..... Drlg. 3,150 ft.

**JIM WELLS COUNTY**

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.

Putnam and Bode's No. 1 McCarley, 600 ft. from SE line and 1,500 ft. from NE line of 300-ac. tract, Blk. A, of W. H. Bode Subdivision of Wallace D. Wade Ranch ..... T.D. 4,284 ft.; S.D.

Magnolia Pet. Co.'s No. 4 Seeligson, 1,320 ft. N line, 750 ft. W line of Sec. 216 ..... Drlg. 3,050 ft.

**KARNES COUNTY**

Auld & Ricker's No 1 Schaefer, 1,200 ft. from S line, 300 ft. from W line of N. Schaefer 447.5-ac. tract, in A. W. Belvins Sur. ..... Location.

R. E. Cexeaux et al's No. 1 Tom Campbell, 330 ft. S and E cor. of farm and survey, J. R. Backer Sur., 12½ miles SW of Falls City ..... Rigging up.

Harrison Oil Co.'s No. 1 Martin Schaefer, 330 ft. from SW line, 1,200 ft. from SE line of L.P.I.A.&M. Sur. ..... Location.

Houston Oil Co.'s No. 1-A Niehaus, N offset to No. 1 Niehaus ..... Drlg. 3,127 ft.

Houston Oil Co.'s No. 2-B Neihaus, 893 ft. from E line and 260 ft. from N line of lease ..... Drlg. 2,575 ft.

G. A. Ray's No. 2 Radford, 4 miles N of Pettus Field ..... T.D. 3,585 ft.; trying for D.S. test.

C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; standing; may deepen to Yegua.

Martin's No. 1 Houston, Thomas Leople Sur. No. 761 ..... Top black shale 1,023 ft.; T.D. 1,985 ft.; to deepen.

**KENDALL COUNTY**

Pierce & Garvey's No. 2 D. Werner, 1,140 ft. E, 420 ft. S line of J. F. Perry Sur., 6½ miles N of Kendalia ..... T.D. 400 ft.; S.D.

**KERR COUNTY**

Edminston & Walker's No. 1 Whitworth, 1,160 ft. from S line and 1,333 ft. from E line of Sec. 1,439 of the H.E.&W.T. Sur. ..... T.D. 525 ft.; S.D.

Jeff Love and Eastland Oil Co.'s No. 5-E Jeff Love, 1,500 ft. SE of No. 1 and 1,580 ft. from SE cor. and 300 ft. from N line of Sec. 1,591 ..... T.D. 875 ft.; S.D.

G. F. Schreiner's No. 3 Love, 1,420 ft. from W line, 1,260 ft. from S line of Sur. No. 1,594 ..... Location.

**KLEBERG COUNTY**

J. S. Brown's No. 1 Antone Dietz, Sec. 7, Hotch estate ..... T.D. 2,845 ft.; S.D.

Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 3, Kleberg Town & Improvement Co. Sur. ..... T.D. 2,350 ft.; D.S. test 2,315-19 ft.; four joints mud, oil and sand; S.D.

**LEE COUNTY**

Jas. B. Pederson's No. 1 Turner, David Hudson Sur. ..... Drlg. shale 3,997 ft.

H. A. Sheriack's No. 1 Otto, 726 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..... T.D. 1,495 ft.; S.D.

**LIVE OAK COUNTY**

Houston Oil Co.'s No. 25 Cartwright, J. Sandman Sur. ..... Drlg. 4,550 ft.

G. C. Potter's No. 1 Jacobs, 1,763 ft. N line, 2,445 ft. E line, Sec. 1, G.H.&H. Sur., 2½ miles E of Jacob Pool ..... Drlg. 100 ft.

Unity Pet. Co.'s No. 1 Terrill, begin at NE cor. of Reifert's 142-ac. tract, which is Blk. 7, go S along W line of survey 2,000 ft., thence E at R/A 316 ft. in C. Scanlon Sur. ..... T.D. 60 ft.; W.O.C.

Witherspoon Oil Co.'s No. 2 H. Clements, 100 ft. S of No. 1 junked hole, Ellis Jordan Sur. ..... Cemented 7-in. csg. at 515 ft.; W.O.C.

Witherspoon Oil Co.'s No. 2 Marbach, 1,290 ft. from S line, 600 ft. from W line of Blk. 15, E. Jordan Sur. ..... T.D. 506 ft.; testing gas sand.

Ike Taylor's No. 2 Griffith, 1,200 ft. from E line and 1,151 ft. from S line of lease in Tract 5, D. Osborne Sur. ..... Rigging up.

**MAVERICK COUNTY**

Stroman & Wright's No. 2 Debona, 440 varas E line, 280 varas S line of Sur. No. 1 ..... Drlg. sandy shale 630 ft.; no report.

Ollie Wright's No. 1 L. Little, 600 ft. from N line, 3,600 ft. from E line of Potter Sur. No. 65 (10 mi. N of Eagle Pass) ..... T.D. 602 ft.; S.D.

**McMULLEN COUNTY**

Buford & Golightly's No. 1 Masuer, 760 ft. N line and 340 ft. E line of Sec. 23, H.T.&B. Sur., 5 miles W of Wentz ..... T.D. 1,010 ft.; S.D.

Gleason et al's No. 1 Miles, Chas. Stephens Sur. ..... Location; T.A.

Hall & Howard's No. 2 Lark, Scrugham Sur. ..... T.D. 1,074 ft.; testing.

Jane Oil Co.'s No. 2 Lark, 1,320 ft. N line of Survey and 150 ft. E of No. 1 in Seeligham Sur. ..... T.D. 1,027 ft.; standing.

W. H. Kennon's No. 2 Lark, 150 ft. from N and W lines of Scrugham Sur. ..... T.D. 1,058 ft.; comp. 125 bbls. dly. on pump.

Don Long's No. 1 Nueces Land & Livestock Co., Sec. 111 ..... Location.

C. C. Shumway's No. 6 Shiner, 2,310 ft. from N line and 330 ft. from E line of NE¼ of Section 62 of the Shumway Subdivision of the Shiner Ranch ..... T.D. 1,755 ft.; S.D.

Texle Oil Co.'s No. 3 Jacobs, 5,393 ft. NE line and 330 ft. SE line of Benham Sur. ..... T.D. 937 ft.; S.D.

**MEDINA COUNTY**

Scoggins & Sanders' No. 1 L. W. Bursil, 150 ft. from E line, 1,750 ft. from N line of M. E. Gage Sur. 195 ..... Drlg. lime and shale 1,330 ft

**MENARD COUNTY**

Duffey-Chedster's No. 1 Mears Wilkinson, 660 ft. S line and 660 ft. W line of T.&N.O. Sur., Sec. 23, Abstract 758 ..... Rigging up.

**NUECES COUNTY**

Benedum & Trees' No. 1 Bickham, 3,050 ft. NE line, 375 ft. SE line of 200-ac. tract in Farras Sur. ..... Drlg. 5,900 ft.

Clymore Prod., Inc.'s No. 4-A Ingram, 660 ft. S and E lines of Lot 5, Sec. 6, Peters Subd. No. 2 ..... Set 10-in. at 650 ft.; W.O.C.

Clymore Prod., Inc.'s No. 1-B J. C. Ingram, 500 ft. N line, 660 ft. E line of Lot 4, Sec. 9, Peters Subd. No. 2 ..... T.D. 4,816 ft.; comp. 95 bbls. day, ¼-in. choke; tubing pressure 1,800 lbs.; csg. pressure 1,900 lbs.

Clymore Prod., Inc.'s No. 1-D J. C. Ingram, 660 ft. N line, 660 ft. E line of Lot 7, Sec. 6, Peters Subd. No. 2 ..... T.D. 4,790 ft.; comp. 100 bbls. dly.

Diadem Oil Co.'s No. 1 J. C. Mayo, 1,000 ft. along line from SE cor. in NW direction, thence due N 300 ft. (near Robstown), Sec. 23 ..... T.D. 5,816 ft.; prep. to abd.

Holliday et al's No. 1 Hutchins, 330 ft. from N line, 94 ft. from W line of 62-ac. lease ..... Rigging up.

Houston Oil Co.'s No. 2 W. W. Walton, 1,960 ft. from S line, 425 ft. from W line of Walton's 432-ac. tract. Drlg. 1,800 ft.

South Mineral Corp.'s No. 2 Ocher, 2,569 ft. from S line, 417 ft. from E line of 95-ac. tract in Sur. 418, Sec. 8 ..... Rigging up.

Stanolind O. & G. Co.'s No. 2 Stratton, 1,980 ft. from N line, 660 ft. from W line of NE Sec. 13, DeAbajo grant ..... Moving in.

Texas Seaboard's No. 1 Chapman, 1,320 ft. N and E lines of Sec. 40, 12m iles SW of Corpus Christi ..... T.D. 5,182 ft.; reaming.

**REAL COUNTY**

H. J. Heartwell et al's No. 2 L. J. Haby, 694 ft. from W line and 2,152 ft. from S line of A.B.&M. Sur. No. 175 ..... Drlg. lime 2,540 ft.

**SAN PATRICIO COUNTY**

Atkins-O'Neil and Continental's No. 2 Welder, 466 ft. from S and E lines of lease, Blk. 2, two locations S of Circle W Oil Co.'s No. 1 Welder ..... Drlg. 200 ft.

Carpenter et al's No. 1 Sadler, 300 ft. each way out of SE cor. Blk. 1, Sec. 32, T. Peres Sur ..... Drlg. 4,825 ft.; no report.

Continental and Atkins & O'Neil's No. 1-A Welder, 584 ft. from NE line, 466 ft. from SE line of Blk. 2, Hart Sur. ..... T.D. 1,000 ft.; W.O.C.

Heep Oil Co.'s No. 1 R. H. Welder, 300 ft. from N line, 467 ft. from W line of Welder 5.46-ac. tract ..... Rigging up.

Jane Oil Co.'s No. 1 Ragsdale Bros., Sec. 58, Geo. H. Paul Subd. ..... Derrick.

Josey Oil Co.'s No. 1 Welder, 1,500 ft. NW or Atkins & O'Neil and Continental Oil Co.'s No. 1 discovery well ..... T.D. 6,017 ft.; P.B. to 5,100 ft.; drilled to 5,373 ft.; trying to bring in.

J. C. Means' No. 1 C. C. Smith, 990 ft. from N line, 330 ft. from W line of survey, J. W. Pays Sur., 1¼ miles NE of Angelita ..... Derrick.

Petrol Corp.'s No. 1 R. H. Welder, 467 ft. from S and E lines of 300-ac. tract ..... Rigging up.

Plymouth Oil Co.'s No. 1-B Welder, 3,500 ft. NW of No. 1-A ..... Drlg. 2,255 ft.

Plymouth Oil Co.'s No. 2-A Wilder, 1,320 ft. due E of No. 1-A ..... Drlg. 4,675 ft.

Stanolind O. & G. Co.'s No. 2 Stratton, 1 mile NE of No. 1, completed 2 yrs. ago ..... Location.

**STARR COUNTY**

Chas. H. Andrews et al's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E line of Sec. 6 (NE part of county) ..... T.D. 310 ft.; prep. to start up.

B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..... Rigged up and S.D.

J. B. Buell's No. 1 V. C. Guerra, 330 ft. from NE line and 425 ft. from SE line of Sur. 10 ..... T.D. 1,812 ft.; S.D.

Jim Clouc, Inc.'s No. 1 J. Rodriquez, Share 35, Porcion 88, ancient jurisdiction of Camargo ..... Drlg. 160 ft.

Cooper & Andrews' No. 1 J. M. Martinez, SW cor. of Sec. 135 ..... Old well, to deepen; T.D. 3,200 ft.

Dean Bros.' No. 1 M. M. Garcia, 2,150 ft. from S line, 4,600 ft. from W line of Sur. No. 916 ..... T.D. 150 ft.; S.D.

Great Plains Oil Co.'s No. 1 Sanches, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344 .. T.D. 3,905 ft.; S.D.

H. C. Harter's No. 1 Sanches et al, 530 ft. from N line and 450 ft. from W line of Share 72, Porcion 72.. Spud and S.D.

Merle Gundy's No. 1 Block, NW of Sur. 167 ..... Spud and set surface csg.

J. P. Kennedy's No. 7 Kelsey Bass, 330 ft. from N line, 150 ft. from W line of 40-ac. lease in Per Sur. No. 76 ..... T.D. 446 ft.; comp. for 8 bbls. per day on pump.

Mitchell's No. 1 Kelsey-Bass, 150 ft. from N, 1,150 ft. from E lines of Share 5, Porcion 76, ancient jurisdiction of Camargo ..... Location.

R. M. Mitchell's No. 1 Seabury, 4,000 ft. from N line, 150 ft. from E line of Share 5, in Per Sur. No. 75.. T.D. 210 ft.; S.D.

Smith-Tex. Oil Co.'s No. 1 Starr County Cattle Co., 150 ft. from NW cor. N½, Blk. 24, Porcion 89 ..... Drlg. 2,100 ft.

Smith-Tex. Oil Co.'s No. 2 Starr County Cattle Co., 150 ft. out of NW cor. of E¼ of Blk. 37, Porcion 89.. Location.

Sun Oil Co.'s No. 6-C, V. C. deGuerra et al, 3,300 ft. from NW and 660 ft. from SW lines of Share 1, Saratoga grant, NW Starr County ..... Drlg. 3,160 ft.

Weekly Oil Corp.'s No. 1 M. M. Garcia, 330 ft. from S, 330 ft. from W lines of Blk. 40, tract 1, in N end of Porcion 99, ancient jurisdiction of Camargo.. Drlg. 2,912 ft.

E. L. Younkin's No. 1 Kelsey Bass, 330 ft. from S line, 7 ft. from W line of Blk. 19, in Porcion 87 ..... Drlg. 100 ft

**TRAVIS COUNTY**

Humble O. & R. Co.'s No. 1 P. C. Wells, 150 ft. NW line, 150 ft. NE line of farm, 185 ft. SW line and 1,000 ft. SE line of James P. Kemp Sur. ..... Drlg. 905 ft.

**UVALDE COUNTY**

Evans & Johnson's No. 1 Farris, J Hammons Sur. ..... T.D. 1,093 ft.; S.D.

Lon Evans' No. 1 Stone, 2,566 ft. from N line and 1,473 ft. from E line of survey, 8½ miles NE of Uvalde, Kent Sur. No. 652 ..... T.D. 129 ft.; S.D.

Humble Oil & Ref. Co.'s No. 1 R. L. Anderson, 7,450 ft. SW of NE line and 9,100 ft. SE of NW line of J. J. Guerra Sur. (3 mi. NE of Uvalde) ..... T.D. 2,098 ft.; fishing.

T. T. Word's No. 2 Trulove, 40 ft. N. 42 deg. E. of No. 1.. T.D. 471 ft.; reaming.

**WEBB COUNTY**

Fidelity Exploration Co.'s No. 1 Soldivar, 1,300 ft. from E line, 2,600 ft. from N line of Sur. 657 ..... Drlg. 1,061 ft.

Gohlson's No. 1 Yeager, 330 ft. W line and 300 ft. S line of NW¼ of Sur. 346, NE part of county ..... T.D. 1,500 ft.; abd.

J. D. Manley's No. 1 S. Benavides, 347 ft. NW line, 313 ft. NE line of Blk. 318, Hill Subd. of M. Arispe grant ..... Drlg. 2,420 ft.

Shankel et al's No. 1 Saldivar, Sur. 652 of J. V. Borrego grant ..... R.U.

Weekley Oil Corp.'s No. 1 R. Salvidor, 1,369 ft. from E line and 243 ft. from N line of Sec. 657, Borrego grant (SE part of county) ..... T.D. 657 ft.; S.D.

**WILLIAMSON COUNTY**

McLean Pet. Co.'s No. 1 Robert Streit, 350 ft. from NE line, 350 ft. from SE line of 205-ac. tract in J. West Sur. ..... Drlg. shale 1,720 ft.

**ZAPATA COUNTY**

J. W. Killam's No. 1 Bruni, 660 ft. SE line, 330 ft. SW line of Blk. 14, Sur. 13, 4 miles NW of Mirando Valley ..... Drlg. 1,783 ft.

R. B. Morrison's No. 1 Y. and R. Ramirez, 330 ft. from NE line and 330 ft. from SE line of Blk. 4, Share 20, Porcion 19 (5 mi. from Starr County line) ..... T.D. 2,176 ft.; testing.

H. V. & W. Oil Co.'s No. 1 Cuellar ..... T.D. 1,125 ft.; S.D.

Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 30, Muckelroy Subd. of Porcion No. 37 ..... Derrick.

Robert Newton's No. 1 O. W. Killam, 150 ft. NW line, 150 ft. SW line, Sec. 186, Blk. 6 ..... T.D. 1,605 ft.; S.D.

Joe Palmer's No. 11 S. Vela, 330 ft. from NE and SE lines of Blk. 170, Share 4 of L. Grillo grant, (3 mi. E of Redondo Pool) ..... Moving in.

## Southwest Texas Proven Areas

**Week Ending June 30**

**NORTH DALE POOL—BASTROP COUNTY**

Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,330 ft. from NW line of John Maximilian Sur. No. 22 ..... Top Austin 2,149 ft.; T.D. ... ft.; S.D.

**NORTH PETTUS FIELD—BEE COUNTY**

Bryce McCandless' No. 1 Beeville Natl. Bank, 330 ft. out of NW cor. of 142-ac. tract in G. B. Meyers Sur. Building derrick.

Kemp Oil Co.'s No. 1 Welcon & Lackey, 1,694 ft. from NW line, 1,607 ft. from SW line of 1,000-ac. tract in J. Gomez Sur. ..... Derrick.

Magnolia Pet. Co.'s No. 4 Porter, 500 ft. W of No. 3 and offset to Sun's No. 1 Scarborough ..... Drlg. 1,550 ft.

Magnolia Pet. Co.'s No. 5 Porter, 330 ft. from S line of lease, 425 ft. from No. 4 ..... Location.

Magnolia Pet. Co.'s No. 6 Porter, 330 ft. from S line of lease, 660 ft. E of No. 3 ..... Location.

United Prod. Co.'s No. 45 Ray, 2,332 ft. SW of No. 13 and parallel with N line of tract, thence SE at right angles from N line of tract, W. J. Porter Sur. ..... T.D. 4,550 ft.; P.B. to 3,810 ft. to test.

**ECKERT POOL—BEXAR COUNTY**

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 1,055 ft.; set 6⅝-in. csg.; S.D.

J. F. Harrison's No. 4 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 38-ac. tract in J. Montes Sur. ..... T.D. 431 ft., S.D.

**VON ORMY POOL—BEXAR COUNTY**

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... T.D. 720 ft.; S.D.

**EAGLE HILL POOL—DUVAL COUNTY**

Shasta Oil Co.'s No. 3 J. R. Foster, 990 ft. from N line and 165 ft. from W line of 70-ac. tract in Sec. 206... Moving in rig.

**GOVERNMENT WELLS POOL—DUVAL COUNTY**

Humble O. & R. Co.'s No. 27 Paul White, 330 ft. from N line, 1,940 ft. from E line of Sur. 58 ..... Coring 2,315 ft.

Humble O. & R. Co.'s No. 28 Paul White, 990 ft. from N line, 2,970 ft. from E line, Sur. 249 ..... Rigging up.

Magnolia Pet. Co.'s No. 1 Duval County Ranch, 330 ft. N line and E line of Sur. No. 58 ..... Coring 2,670 ft.

Magnolia Pet. Co.'s No. 5 Duval County Ranch, 330 ft. from S and E lines of NE¼ of Sur. No. 59 ..... Drlg. 1,600 ft.

Magnolia Pet. Co.'s No. 29 Duval, 1,650 ft. from W line, 2,310 ft. from S line, Sur. 208 ..... Location.

Magnolia Pet. Co.'s No. 2 Hahl-Burch, 990 ft. from S line, 330 ft. from E line of Sec. 61 ..... T.D. 2,257 ft.; comp. 500,000 ft. gas, 75 bbls. oil, daily.

Magnolia Pet. Co.'s No. 3 Hahl-Southland, 990 ft. from N and W lines of Sur. 61 ..... T.D. 2,284 ft.; comp. 10 bbls. hr., ¼-in. choke.

Reynosa Oil Co.'s No. 6-D Duval, 330 ft. from N and W lines of S½ SW, Sur. 362 ..... T.D. 1,595 ft.; comp. 500,000 ft. gas; 500 lbs. rock pressure

Southwest Drlg. Co.'s No. 14 Wendt, 330 ft. from S and W lines of N½ SW, Sur. 43 ..... Drlg. 1,600 ft.

Sun Oil Co.'s No. 33 Weiderkehr, 330 ft. from S line, 990 ft. from E line of Sur. No. 359 ..... Location.

Sun Oil Co.'s No. 62 Weiderkehr, 330 ft. from S line, 990 ft. from W line of Sec. 361 ..... Drlg. 2,637 ft.

Sun Oil Co.'s No. 64 Weiderkehr, 1,650 ft. from N and W lines, or 660 ft. S of No. 15 ..... T.D. 35 ft.; W.O.C.

Texas Co.'s No. 11 Duval County Ranch, 1,650 ft. N and 330 ft. W, SE cor. Sec. 362, J. Poitevent Sur. .. T.D. 2,325 ft.; comp. 25 bbls. day on pump.

Texas Co.'s No. 12 Johnson, 990 ft. N, 330 ft. E of SW cor. of lease, Sur. 42 ..... Drlg. 2,274 ft.

**KINGSVILLE POOL—KLEBERG COUNTY**

Ryals & Bartlett's No. 1 Fiato, 150 ft. from N line, 30 ft. from W line of NE SE Sec. 40, of Kleberg Town & Improvement Co. Sur. ..... T.D. 985 ft.; S.D.

**JACOB POOL—McMULLEN COUNTY**

Jane Oil Co.'s No. 1 Lark, 150 ft. from S and 100 ft from W line of Blk. 13 ..... T.D. 1,048 ft.; testing.

C. R. Kennon's No. 1 Lark, 810 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrugham Sur. ..... T.D. 1,072 ft.; S.O. 1,050-68 ft.; comp. 15 bbls. daily on pump.

Loma Oil Co.'s No. 27-A Jacob, 1,320 ft. N 15 deg. E of No. 22 ..... Spud.

Light Stephenson's No. 2 Lark, 150 ft. from S and W lines of Blk. No. 1, Lark Subd. ..... Rigging up.

Stewart-Smith & Storey's No. 1 L. Jacobs, 3,801 ft. due S of Texio's No. 3 Jacobs, in John Fadden Sur. No. 8 Rigging up.

**CUEVITAS POOL—STARR COUNTY**

Sun Oil Co.'s No. 5-C M. Guerra & Son, 1,320 ft. NE of No. 4-C La Sacatosa grant ..... Location.

**AGUA DULCE—NUECES COUNTY**

Camp et al's No. 2 King, 990 ft. S of N line, 330 ft. W of E line of Sec. 24, R. Garza Sur. ..... T.D. 6,021 ft.; testing.

Garland Clymore's No. 2-A Ollie Purl, 660 ft. from E line and 660 ft. from S line of Blk. 4, Section 6, Ross Peters Subd. ..... T.D. 4,804 ft.; W.O.C.

**LOS OLMOS POOL—STARR COUNTY**

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 568 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

**JENNINGS POOL—ZAPATA COUNTY**

Texas Co.'s No. 48 Jennings ..... T.D. 1,238 ft.; bailing.

## Vapor Locking Discussed Before Transport Men

(Continued from Page 52)

gasoline does not vapor lock, then it is almost a foregone conclusion that the conditions which produced vapor lock in the first instance have not been duplicated.

Vapor lock is extremely sensitive—the smallest changes in conditions will either induce vapor lock or correct it.

Other troubles and difficulties with automobiles are frequently mistaken for vapor lock.

When real vapor lock is encountered the best service that can be rendered to the customer is to help him change his fuel system so he can avoid the inconvenience.

The ultimate cure for this inconvenience is to rationalize the fuel systems of a few car models to provide for the quality of gasoline which will most certainly be the economic supply of the immediate future. We may not be able to develop perfect fuel systems but we can certainly effect a vast improvement over the present systems.

### DEATH OF MRS. F. A. HOWARD

Mrs. Almeda Barr Howard, wife of Frank A. Howard, president of the Standard Oil Development Co., died June 27 at the family home in Elizabeth, N. J. She is survived by her husband, two daughters and three sons.

# New Polo Pool in Noble County Will Have Pipe Line Connections Shortly; Interesting Tests

By JAMES McINTYRE

The crude oil production of Oklahoma for the month of July having pegged at 489,500 bbls. per day by Oil Administrator Ickes, the Corporation Commission of the State set about allocating the allowable output among the many fields with the following results, the figures representing the daily allowable and the percentage of "potential":

| | | |
|---|---|---|
| Oklahoma City: | | |
| Wilcox zone | 124,770 | 6 |
| Simpson zone | 41,681 | 50 |
| Fault line zone | 1,430 | 37 |
| Total | 167,881 | |
| Seminole | 64,006 | 54 |
| Maud | 979 | 83 |
| St. Louis | 19,106 | 40 |
| Asher-Wanette | 1,467 | 90 |
| Konawa | 1,864 | 72 |
| Sasakwa | 795 | 73 |
| Allen | 7,379 | 66 |
| Sasakwa town | 1,513 | 13 |
| Calvin Earlsboro | 1,424 | 27 |
| Tatums | 6,536 | 40 |
| Fish | 2,026 | 90 |
| Crescent | 4,450 | 7 |
| Lucien | 8,900 | 7 |
| Keokuk Falls | 1,335 | 9 |
| Simpson-Fish | 287 | 40 |
| Remainder | 199,552 | .. |
| Total | 489,500 | |

The Federal reduction was made because of Oklahoma oil going into storage, and the commission has been advised that the oil administrator will permit withdrawals from storage to a maximum of 36,300 bbls. daily if the amount is needed to meet refinery requirements.

In an effort to wipe out underproduction in the Wilcox sand of the Oklahoma City Field, all current and deferred underage was allowed for the period. This is the only producing zone in the State permitted to carry over more than a two-day allowable.

### Line to Polo Pool

The Stanolind Pipe Line Co. is running a line from the Lucien Pool to the Texas Co.'s No. 1 Voss, SW NE SE Section 28-22-2w, in the new Polo Pool, west of Perry, Noble County, and the well will be shut in until the line is completed and connections are made. It is at a total depth of 4,856½ feet, and in the Wilcox sand. Its best day's production was 919 bbls.

The Continental Oil Co.'s No. 1 Bennett, SE SE NW Section 19-20-1w, in Noble County, will be tested this week. It is in the First Wilcox sand at a total depth of 5,115 feet with 2,000 feet of oil and 200 feet of water in the hole.

An interesting test will be started this month in Lincoln County by Tom Bennett, Inc., and the Indian Territory Illuminating Oil Co. It will be No. 1 Bowlby, C SE SW Section 27-12-2e, in the extreme southwestern township in the county. It will be a 6,000-foot test, at which depth it is expected to have penetrated the Wilcox sand.

### Daily Average Production

Estimated daily average production in the week ending June 30 and the preceding week was as follows:

| Pool— | Barrels— June 30 | June 23 |
|---|---|---|
| Allen | 8,195 | 8,325 |
| Blackwell district | 4,950 | 5,000 |
| Bristow-Slick | 10,500 | 10,500 |
| Cushing-Shamrock | 14,250 | 14,050 |
| Chandler district | 6,500 | 5,900 |
| Davenport | 750 | 775 |
| Healdton | 9,150 | 9,100 |
| Hewitt | 4,950 | 4,950 |
| Burbank | 9,100 | 9,100 |
| South Burbank | 5,600 | 5,600 |
| Balance of Osage | 25,250 | 25,000 |
| Lucien | 9,880 | 8,700 |
| Crescent | 5,905 | 7,315 |
| Marshall-Lovell | 1,300 | 1,400 |
| Bowlegs | 10,950 | 12,185 |
| Carr City | 5,940 | 7,320 |
| Earlsboro | 10,350 | 10,995 |
| East Earlsboro | 12,090 | 12,145 |
| South Earlsboro | 1,355 | 1,445 |
| Little River | 14,015 | 16,105 |
| East Little River | 875 | 885 |
| Seminole | 11,245 | 12,545 |
| East Seminole | 1,265 | 1,055 |
| Searight | 2,640 | 2,680 |
| Maud | 1,096 | 1,205 |
| Mission | 3,435 | 3,885 |
| St. Louis-Pearson | 25,995 | 24,800 |
| Cromwell | 4,750 | 4,650 |
| Papoose | 1,300 | 1,350 |
| Oklahoma City | 177,800 | 188,845 |
| Asher-West Asher | 1,520 | 1,910 |
| Tatums | 6,585 | 6,950 |
| Sholem-Alechem | 4,475 | 4,500 |
| Duncan | 4,500 | 4,375 |
| Tonkawa-Garber-Thomas | 6,700 | 6,800 |
| Fish | 4,440 | 4,130 |
| Konawa | 2,165 | 2,145 |
| Gray | 2,160 | 2,085 |
| Graham | 3,700 | 3,575 |
| Holdenville | 3,085 | 3,225 |
| Wewoka | 4,350 | 4,450 |
| Yale-Jennings | 5,125 | 5,125 |
| Other pools | 64,904 | 63,360 |
| Total | 515,090 | 530,410 |

### Osage County

Continental Oil Co.'s No. 1, NW cor. SW Section 33-26-6, Osage County, was dry and abandoned. It had been drilled to Mississippi lime at 3,004 feet, then plugged back and shot at 2,918-34 feet, but there was only a slight showing of oil.

The Empire Oil & Refining Co.'s wildcat test in the SE cor. NE Section 3-25-3, had Cleveland sand at 2,881-2,934 feet and oil rose in the hole 2,600 feet. Top of the lime was found at 3,038 feet, and the test was drilling at 3,040 feet.

H. F. Worley's test in the SE NE SW Section 16-25-6, was plugged back from 2,836 feet to 2,833½ feet, to shut off salt water. Tubing was run and a four and one-half hour pumping test was made, the well yielding 34 bbls. in that time.

Champlin Refining Co. completed No. 1o Kennedy in the NE SW SE Section 16-24-7, Naval Reserve Pool. It flowed 258 bbls. in 17 hours, after a 60-quart shot at 2,643-78 feet.

A. H. Kasishke's No. 101, NW cor. Section 16-24-7, was a hole full of oil at 2,607-32 feet, and drilling.

Lewis Production Co. completed its No. 1 in the NE SW Section 28-24-7. It was shot with 80 quarts at 2,586-2,642 feet and started at 425 bbls. per day.

J. R. Higgins' No. 1, SW cor. SE Section 25-21-10, was dry and abandoned at 2,242 feet, 27 feet in Mississippi lime.

First reports of new work in the county included Skelly Oil Co.'s No. 6, M. Ducotey, SE SW SW Section 3-25-6, rigged up; Midco Oil Co.'s No. 6 Adlum, NE NW NW Section 10-25-6, rigged up; A. H. Kasishke's No. 2 Carroll, NE SW Section 15-25-6, old total depth 2,763 feet, moving in to deepen; Lewis Production Co. and Continental Oil Co.'s No. 6, SW SE SW Section 16-24-7, location; Lewis Production Co.'s No. 6, NE NW NW Section 21-24-7, location; Felix Quinlan's No. 5, CNL SW Section 26-24-8, rigged up to deepen from 1,840 feet; Sinclair Prairie & Norbla Oil Co.'s No. 1, SW NW NE Section 26-23-9, spudding; Texas Co.'s No. 7 Taylor, SE SW SE Section 28-23-11, location; W. C. McBride, Inc.'s No. 61, CNL SE NE Section 5-22-11, location; Superior Oil Co.'s No. 7, SW SE NE SE Section 5-22-11, location; Carl T. Matthews' No. 3, NE cor. NW Section 26-21-8, location; Texas Co.'s No. 6, CSL NW SW NW Section 33-21-12, moving in to deepen from 1,493 feet.

### Northwestern Fields

Carter Oil Co. is rigged up to start No. 1 Cline, SE SW SE Section 16-28-5, Kay County.

Sinclair Prairie Oil Co. has rotary rigged up to start No. 1 Neff, C NW NW SE Section 21-26-24w, Harper County.

Acre and others were fishing for tools in No. 1 Acre, C SW NE Section 14-24-11w, Alfalfa County, total depth 6,460 feet.

Lucien Consolidated's No. 4 Magney, C NW SW Section 7-20-2w, in the Lucien Pool in Noble County, had first Wilcox sand at 5,104-58 feet and second Wilcox sand at 5,216 feet, total depth 5,272 feet, and shut down for orders. The hole stood with 3,000 feet of oil. Same operators' No. 3 Wolff, C SW NW Section 7-20-2w, had Wilcox sand at 5,084 feet, with a small showing of oil at 5,124-27 feet, and an increased showing at 5,145-49 feet. Oil rose in the hole 2,500 feet in 24 hours; total depth 5,180 feet, and drilling in green shale.

Magnolia Petroleum Co.'s No. 1 Smith, C NE SW Section 29-20-2w, was plugged back to first Wilcox sand at 5,006-33 feet. The well flowed 90 bbls. in 24 hours and was to be shot. The second Wilcox showed only water at 5,205-06 feet. Sinclair Prairie Oil Co.'s No. 2 Bohn, C SW NE Section 29-20-2w, had first Wilcox sand at 5,001 feet and set 7-inch pipe at 5,111 feet and the crew was waiting for cement to set.

Continental Oil Co.'s No. 1 Bennett, SE cor. NW Section 19-20-1w, was bailing Wilcox sand at 5,106-15 feet, total depth. The sand showed oil, gas and water.

### Creek County

Sinclair Prairie Oil Co. had rig up and was moving in tools to start No. 25 Powell, C NE SE Section 11-18-7, in the north end of the old Cushing Field in Creek County.

Bay State Oil Co. completed No. 5 Crabtree, NW SW SW Section 34-18-8, which started at 115 bbls. a day, following a shot in Red Fork sand at 2,674-2,700 feet.

Kerr & Bisett's No. 1-A Sanger, NE NW SE SE Section 9-19-10, Creek County, deepened from 632 feet to 835 feet, found nothing in the lower level and was dry and abandoned.

E. L. Robinson was rigged up to start No. 4 Price, SE SW NE Section 3-18-8.

Mead Oil Co.'s No. 3 Harjo, SW cor. NW Section 35-18-8, was dry and abandoned at 2,779 feet. It had Layton, Jones, Red Fork and Bartlesville sands, but all were dry.

F. O. Akin's No. 1 Kelly, SW NE NW Section 2-17-8, was drilled to Wilcox sand at 3,416-19 feet, but it was dry and the hole was abandoned. It was an old well formerly bottomed at 3,076 feet.

Doke & Hughes completed No. 3 Watson, NE NW NW Section 10-17-8, a 25-bbl. well after a shot in Layton sand at 1,375-1,406 feet.

J. E. Crosbie, Inc., made a location for No. 4 Casey, NE NW SE Section 3-17-8. Magnolia Petroleum Co. had rig

## Wildcat Operations in Oklahoma

Week Ending June 30

**NORTHERN OKLAHOMA**

**ALFALFA COUNTY**

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w.
T.D. 6,460 ft.; fishing for tools.

**BECKHAM COUNTY**

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 17-8-26w.
Rigging up rotary.

Price and Watchorn O. & G. Co.'s No. 1 Hoard, NE SW Sec. 17-8-26w.
Running 10-in. csg., 475 ft.

**CADDO COUNTY**

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w.
Drlg. 11,167 ft.

**CLEVELAND COUNTY**

Phillips Pet. Co. et al's No. 1 Baker, C SE NW Sec. 11-9-2w.
Drlg. 5,870 ft.

**COAL COUNTY**

Moore & Deaner's No. 1 Edward, NW NE SE Sec. 27-2-8.
S.D. 4,970 ft.

Emanuel, Rudman & Hatcher's No. 1 Moyer, C SW SE NW Sec. 7-3-8.
S.D. 1,525 ft.

**GARFIELD COUNTY**

Ross Cummings et al's No. 1 Gage, SE NW Sec. 27-23-3w.
Spudded

**GARVIN COUNTY**

Denver P. & R.'s No. 1 Newburn, C SE SW Sec. 22-5-1e.
Drlg. 5,410 ft.

**GRADY COUNTY**

Travis et al's No. 1 Carter, NW NE SE Sec. 32-3-7w.
Rig.

**GRANT COUNTY**

W. Earl Witt et al's No. 1 Patton, SW SE Sec. 19-29-3w.
Cellar and pits.

**HARPER COUNTY**

Sinclair Prairie Oil Co.'s No. 1 Neff, C SW SE Sec. 21-26-24w.
Rigging up.

**HUGHES COUNTY**

Dickison et al's No. 1 Webster, NW NE Sec. 22-10-10.
Rig on ground.

J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9.
T.D. 1,075 ft.; S.D.

Olympic Oil Co.'s No. 1-A McClassen, SE NW NW Sec. 12-9-8.
Cromwell sand 3,433 ft.; T.D. 3,478 ft.; small show of oil.

Olympic Oil Co.'s No. 1 McClassen, SE NW NW Sec. 12-9-8.
T.D. 600 ft.; lost tools; S.D.

Scruggs et al's No. 1 Black, NE Sec. 13-9-10.
Dry and abd. 3,929 ft.

Smith et al's No. 1 Farmer, SE NW Sec. 32-5-s.
Set 12-in. pipe at 100 ft.

**KAY COUNTY**

Carter Oil Co.'s No. 1 Cline, SE SW SE Sec. 16-28-5.
Rigging up.

**KINGFISHER COUNTY**

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w.
Drlg. 4,540 ft.

**KIOWA COUNTY**

Bailey & Johnson's No. 1-A Potts, CEL NW NW SW Sec. 31-7-14w.
Machine.

**LEFLORE COUNTY**

East Okla. O. & G. Co.'s No. 1 Metcalf, SW cor. Sec. 2-4-26.
T.D. 1,505 ft.; C.O.

Murdock et al's No. 1 fee, SW NE SW Sec. 15-5-25e.
T.D. 2,425 ft.; drlg. by tools.

**LINCOLN COUNTY**

Harvey Newman Oil Co.'s No. 1 Rueb, C NW NE Sec. 23-15-5.
Cellar.

Mid-Continental Oil Co.'s No. 1 Bolby, NE SE Sec. 27-12-2.
Waiting for rotary tools.

L. G. Hulse's No. 1 Sloan, SW NW SE Sec. 19-17-3.
Old T.D. 1,474 ft.; C.O. at 720 ft.

Texas Co.'s No. 1 Gessmann, SE NE Sec. 33-14-4.
Drlg. 4,958 ft.

**LOGAN COUNTY**

W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1.
Drlg. 4,455 ft.

**NOBLE COUNTY**

Continental Oil Co.'s No. 1 Bennett, SE NW Sec. 19-20-1w.
Wilcox sand 1,506-15 ft.; 200 ft. wtr. and 2,000 ft. oil in hole.

Magnolia Pet. Co.'s No. 1 Crawford, SE NW Sec. 27-21-2.
Drlg. 1,630 ft.

Texas Co. et al's No. 1 Voss, C NE SE Sec. 28-22-2w.
Drlg. 4,895 ft.; flowed 865 bbls. first 33 hrs., 4,809-56 ft.

**OKFUSKEE COUNTY**

Carter Oil Co.'s No. 1 W. H. Dill, C NW SE Sec. 2-11-8.
Location.

Delton Oil Co.'s No. 1 Fixico, SE cor. Sec. 7-11-8.
Rig.

**OKLAHOMA COUNTY**

Gypsy Oil Co. et al' No. 1 Harris, C SW NE Sec. 27-13-4w.
Drlg. 6,868 ft.

(Continued on Next Page)

up for No. 6 Street, SE SW NE Section 3-17-8.

In Lincoln County Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 1 James, NE cor. SW Section 33-13-5, Wilmetta Pool, swabbed 50 bls. of oil and 70 bbls. of water in 16 hours from Hunton lime at 4,241-91 feet.

### In Logan County

In the Crescent Pool, Logan County, Carter Oil Co. and Gypsy Oil Co. had cellar and pits dug for No. 1 Middleton, C SE SE Section 21-17-4w.

Gypsy Oil Co. completed No. 2 Campion, C NW SW Section 27-17-4w, which flowed 5,236 bbls. in 24 hours through casing from sand at 6,220-55 feet.

Gypsy Oil Co. and Carter Oil Co. will deepen No. 1 Good, C SW NW Section 27-17-4w, from its total depth of 6,290 feet. Gypsy Oil Co. had material on the ground for No. 1 Hanewinckel, C NW NW Section 27-17-4w. Eason Oil Co. made a location for No. 2 Katscher, C NW NE SW Section 34-17-4w, and was drilling at 2,450 feet in No. 3 Katscher, C NW SW SW Section 34-17-4w, another 10-acre location.

In the Langston area Mid-Continent Petroleum Corp.'s No. 1 Moss, C SW SE Section 11-17-1w, cored Wilcox sand, white and salty, at 5,101-09 feet. Houghton Royalty Co. had cellar dug for its No. 1 Langston University (Lot 4, Block 57), and the Texas Co. and Stanolind Oil & Gas Co. had rig up for No. 1 Smith, NE NW Section 14-17-1w.

### Lincoln County

In the Misener sand pool west of the Cushing Pool, recently opened by Kemp, Lambert and others in Section 23-17-6, R. L. Kemp's No. 1 Cook, SW NW NE Section 23, was drilling at 3,160 feet. It had top of the Mississippi lime at 2,940 feet and set pipe at 3,030 feet. Sand was found at 3,070 feet; gas at 3,078 feet. At 3,085 feet the well flowed and swabbed 125 bbls. of oil and made 1,000,000 feet of gas in 24 hours. Viola lime was topped at 3,092 feet; Simpson sand at 3,118 feet and Wilcox at 3,157-60 feet, total depth, with a small showing of gas.

Devonian Oil Co.'s No. 1 Smith, NE cor. NW Section 36-15-7, had 3,000 feet of oil in the hole from Wilcox sand at 3,738-57 feet and the crew was testing.

Stanolind Oil Co. and Amerada Petroleum Corp. were building rig No. 1 M. Craig, NE SE NW Section 12-14-3.

### Oklahoma County

Gypsy Oil Co.'s wildcat community test, No. 1 Grant, C SE NW Section 27-13-4w, Oklahoma County, was drilling at 6,868 feet. It had a small showing of oil at 6,798-6,810 feet. The base of the Pennsylvanian and the top of the Hunton lime were found at 6,831 feet.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Seuneram, NE cor. Section 6-13-3w, had Viola lime at 6,335 feet and was drilling at 6,345 feet.

In the Oklahoma City Pool, Skelly Oil and others' No. 1 Empire, 445 feet south and 1,201 feet east of NW cor. Section 3-11-3w, was completed. It produced 646 bbls. in four hours on the gas lift with gas at the rate of 1,250,000 feet per day.

Anderson & Kerr's No. 1 Harris, NW SE NW SE Section 22-11-3w, was shot with 40 quarts at 6,485-6,525 feet and produced 81 bbls. in four hours on the gas lift. It was completed.

Phillips Petroleum Co.'s No. 4 Beauchamp, SW NW SW SE Section 22-11-3w, had Wilcox sand at 6,503-70 feet and produced 320 bbls. in four hours on gas lift. It was shut in.

Mid-Kansas Oil & Gas Co.'s No. 2 Mollman, NW SE SE Section 22-11-3w, deepened from 6,410 feet to 6,452 feet flowed a daily average of 970 bbls. while deepening and was drilling at 6,552 feet.

Indian Territory Illuminating Oil Co.'s No. 1 Oklahoma State land, NW cor. Section 36-11-3w, had sand at 6,555 feet and was drilled to 6,640 feet. The well swabbed 136 bbls. in 12 hours.

Banner Production Co. made a location for No. 3 Bell, CWL NW NW NE Section 27-11-3w, and has rig up for No. 4 Schroeder, CEL SW SE NE Section 22-11-3w.

There was no change in the status of the Springrose Drilling Co.'s No. 1 Edwards, C SE SE Section 19-11-1e. It was shut down at 6,540 feet with 400 feet of drill pipe in the hole.

### Greater Seminole Field

Carter Oil Co. has made a location for a Wilcox test, No. 1 W. H. Dill, C NW SE Section 2-11-8, Okfuskee County. Wrightsman and others have made location for No. 1 Smith, NW cor. SE Section 25-10-7, Okfuskee County. It will be a Wilcox sand test.

Carter Oil Co. and others' No. 1 Pipkin, C N half SE NW Section 2-10-6, Seminole County, had Misener sand at 4,124 feet, at which depth 6-inch casing was set. Sand was cored to 4,134 feet and indicated an average well for that area.

Daylo Oil Co. spudded No. 1 Walker, NE SE SE Section 13-10-10, Okfuskee County. Hicks and others had rig on the ground for No. 1 Mingo, NW NE SW Section 25-10-10.

Helmerich & Payne's No. 1 Brooks, SE NE Section 26-10-10, was completed. It is a 40,000,000-foot gasser at 3,240-54 feet with rock pressure of 1,275 pounds.

Darby Petroleum Corp. and Lippa's No. 1 Barrett, C NW SE Section 19-9-5, Earlsboro district, swabbed 63 bbls. in 24 hours, following an acid treatment in Hunton lime at 4,129-51 feet, total depth 4,158 feet.

Waltermeir Drilling Co.'s No. 1 Littleton, SW cor. NW Section 20-9-5, after a re-treatment with acid in Hunton lime at 4,184-4,217 feet, flowed 180 bbls. in nine hours through tubing.

Sinclair Prairie Oil Co.'s No. 2 Spencer, SE SW SE Section 13-9-6, Seminole City area, was completed. It pumped 116 bbls. in 24 hours, after having been acidized at 3,998-4,062 feet.

Carter Oil Co. and others completed No. 1 Hodges, 2-C, NE SW SE Section 16-9-6. It flowed 220 bbls. in 48 hours through tubing, from sand at 3,558-84 feet.

Scruggs and others' No. 1 Black, NE cor. Section 13-9-10, a wildcat in Hughes County, was abandoned. It had a hole full of water from Wilcox sand at 3,922-29 feet.

Fleethorn and Gypsy Oil Co.'s No. 1 Bowlegs, NE SW Section 27-8-8, in the Wewoka area, was completed after it had pumped 395 bbls. in 24 hours from Wilcox sand at 4,212-14 feet.

### South St. Louis Results

In the South St. Louis area in Pottawatomie County, Inland Development Co.'s No. 1 Brandenberg, SE NW Section 9-7-4, swabbed and flowed 3,120 bbls. of oil and 480 bbls. of water in 48 hours from Hunton lime at 3,738-85 feet and was completed.

Mid-Continent Crude Oil Purchasing Co.'s No. 1 Atwater, NE SE SE Section 9-7-4, swabbed 1,290 bbls. in 48 hours but was not completed. It produces from Hunton at 3,648-3,885 feet, which had been acidized several times.

Conley Drilling Co. reacidized No. 1 Vinson, NE cor. Section 13-7-4, and the well flowed 400 bbls. in 24 hours producing from dolomite at 3,900-83 feet.

## Wildcat Operations in Oklahoma

(Continued from Preceding Page)

Springrose Drlg. Co.'s No. 1 Edwards, C SE Sec. 19-11-1.
T.D. 6,540 ft.; 400 ft. drill pipe in hole.

**OSAGE COUNTY**

Norbla O. & G. Co.'s No. 1, NW SE Sec. 21-24-7.
Drlg. 2,039 ft.
Peters Pet. Co. and Norbla Oil Co.'s No. 1, SW cor. Sec. 15-25-5.
Drlg. 1,640 ft.
Empire O. & R. Co.'s No. 1, SE NE Sec. 3-25-3.
Drlg. 3,040 ft.

**PAWNEE COUNTY**

Geo. Thomas' No. 1 School Land, SW cor. Sec. 13-20-5.
T.D. 3,438 ft.; U.R. 6-in. csg.

**PITTSBURG COUNTY**

Arkhoma's No. 1 Cummings, NW NE SE Sec. 6-4-12.
Fishing 515 ft.
Exchange Drlg. Co.'s No. 1 Chunn, SE NW Sec. 29-4-14.
T.D. 350 ft.; waiting for csg.
W. E. Halley's No. 1 Drew, NW SW Sec. 21-3-14.
S.D. 190 ft.
Mid-Western O. & G. Co.'s No. 1 Shelton, CSL SE NW Sec. 7-7-18.
Drlg. 3,306 ft.
Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14.
Lost tools; T.D. 3,200 ft.; S.D.
C. L. Carlock's No. 1 Chunn, SE NW Sec. 29-4-14.
Rigging up.

**PONTOTOC COUNTY**

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-2-6.
S.D. 2,920 ft.
Boyle et al's No. 1 Newbern, SW NE Sec. 31-5-4.
T.D. 2,237 ft.; hole full sulphur wtr.; cementing.
Jarrett Pet. Co.'s No. 1 Johnson, SE NW Sec. 31-4-7.
Moving in rotary tools.
Dandridge et al's No. 1 Stafford, NW cor. Sec. 5-1-4e.
T.D. 650 ft.; S.D.
Gillette & Kroeger's No. 1 Duver, NW SE Sec. 36-1n-6e.
Machine.
Riddle et al's No. 1 Barnes, SE NW SE Sec. 21-5-4.
T.D. 2,910 ft.; fishing for tools.
Southern Oil Corp's No. 1 Ladd, C NW NW Sec. 27-3-7.
Cellar.

**POTTAWATOMIE COUNTY**

Phillips and Gypsy Oil Co. et al's No. 1 Flynn, NW Sec. 17-6-3e.
Rigging up.
Stanolind-Amerada's No. 1 Goodman, SW NE NE Sec. 5-10-4.
Drlg. 3,190 ft.

**SEMINOLE COUNTY**

Harman Oil Co.'s No. 1 Bowlegs, SE NE SW Sec. 1-7-7.
T.D. 1,655 ft.; fishing.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7.
S.D. 1,260 ft.
Tate & Starbuck's No. 1 Heard, SE NW Sec. 9-6-7.
T.D. 985 ft.; fishing.

**WASHITA COUNTY**

Anadarko Basin Oil Co.'s No. 1 Wolf, NE SW Sec. 23-9-17w.
Rigging up rotary.

**SOUTHERN OKLAHOMA**

**ATOKA COUNTY**

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e.
Set 5-in. csg. 3,496 ft.; will swab.
J. D. Boukan's No. 1 Howard, NW SW NW Sec. 26-2s-10e.
S.D. 1,135 ft.; machine moved out.
L. A. Fitts' No. 1 Blankenship, NE cor. NW Sec. 19-3s-10e.
Drlg. 420 ft.
Malernee et al's No. 1 Greenville, N. B., NW SW Sec. 35-2s-13e.
Drlg. 1,760 ft.

**CARTER COUNTY**

Daphine Oil Co.'s No. 1 Hooks, SE NW NW SE Sec. 5-1s-2w.
Rig.
Hudson & Poland's No. 1 Sullivan, NE SE Sec. 5-5s-1w.
T.D. 2,391 ft.; S.D. for wtr.
McHenry et al's No. 1-A Ratliff, NW SW Sec. 28-1s-2w.
Drlg. 500 ft.

**COMANCHE COUNTY**

Heiden & Taylor's No. 1 Crutcher, SW cor. NE Sec. 11-1n-12w (O.W.D.D.).
S.D. 1,320 ft.; moved out machine.
F. F. Stevens' No. 1 Green, SE SW Sec. 11-1n-13w.
S.D. 920 ft.
Heiden & Taylor's No. 2 Crutcher, C NE Sec. 11-1n-12w.
S.D. 616 ft.

**GARVIN COUNTY**

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-2n-3w.
S.D. 299 ft.

**JOHNSON COUNTY**

Okla. Oil Corp.'s No. 1, SW NE SE Sec. 11-2s-5.
Drlg. 875 ft.

**MARSHALL COUNTY**

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
T.D. 4,937 ft.; recovered drill pipe; recementing surface pipe.

**MURRAY COUNTY**

Gilcrease Oil Co.'s No. 1 Brown, SW cor. Sec. 26-1n-2e.
Drlg. 1,510 ft.
T. E. Revell et al's No. 1 Wolfe, NE cor. Sec. 18-1-2.
S.D. 2,430 ft.

**PUSHMATAHA COUNTY**

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-6s-20e.
Set csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-18e.
T.D. 2,405 ft.; S.D.

**STEPHENS COUNTY**

Geo. Pace et al's No. 1 Jack, NE NW NW Sec. 24-4s-4w.
S.D. 1,220 ft. for repairs.
Carter Oil Co.'s No. 1 Hildebrand, C SW SE NE Sec. 1-3s-7w.
Rigging up.
Carter Oil Co.'s No. 1 McCasland, C NW NW SW Sec. 22-1s-4w.
Rig.
J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w.
S.D. 3,210 ft.

**TILLMAN COUNTY**

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w.
Rig.

Sayre and others' No. 1 Green, SW SE NW Section 15-7-4, swabbed 35 bbls. per hour after an acid treatment in dolomite at 4,222-66 feet, but was given a larger dose of acid.

Hart and others' No. 1 Deathridge, SE NE SE Section 20-7-4, which has been given several acid treatments at various depths down to 4,268 feet, has been plugged back to 4,011 feet and reacidized in Hunton lime.

Superior Oil Co.'s No. 1 Caudle, SW NW NW Section 24-7-4, deepened from 3,773 feet to 4,322 feet, in dolomite, topped at 4,285 feet, was plugged back to 4,317 feet to shut off salt water and reacidized.

Phillaine's No. 2 Garrett, NE SE NW Section 28-7-4, was completed. It swabbed 1,123 bbls. in 24 hours from dolomite at 4,083-4,134 feet. It had been acidized twice.

Sinclair Prairie Oil Co.'s No. 3 Deathridge, SE NE NW Section 28-7-4, had Simpson pay at 4,048-52 feet, total depth, and swabbed 6 bbls. per hour.

Empire Oil & Refining Co. completed No. 1 Billington, SW cor. Section 31-7-5. It was acidized in dolomite at 4,141-83 feet (pay at 4,176-83 feet), and swabbed 583 bbls. of oil and 234 bbls. of water.

In the Holdenville area Harmon and others' No. 1 Vierson, NE SE NW Section 15-7-8, Hughes County, was shot in Gilcrease sand at 3,068-3,090 feet and flowed 18 bbls. in 24 hours. This well made over 15,000,000 feet of gas at 2,948-53 feet.

Bonded Refining Co.'s No. 1 Warren, NW SE NE Section 22-7-8, had sand at 1,205-19 feet and a 5,000,000-foot gas production, with a spray of oil.

Winona Oil Co. and Jarvis & Holm's No. 1 Myers, SE SW NE Section 31-7-8, a deep sand extension of the Fish Pool, flowed 2,722 bbls. of oil through 1¼-inch choke in 13 hours.

Mid-Continent Petroleum Corp.'s No. 3 Upton, SW NE NE Section 1-6-4, Asher area, was completed. It swabbed 472 bbls. of oil and 400 bbls. of water from dolomite at 4,128-71 feet, which had been acidized.

Frank Russell, Inc.'s No. 1 McDaniels, SW SE cor. Section 19-4-6, Gray area, swabbed 45 bbls. of oil in 24 hours following an acid treatment 3,328-33 feet and 3,270-78 feet. It had been drilled to 3,782 feet and got a hole full of water.

Amerada Petroleum Corp.'s No. 1 Grove, SW cor. NE Section 5-6-5, Konawa, was completed. It swabbed and flowed 1,059 bbls. of oil and 360 bbls. of water from dolomite at 4,145-81 feet. It was twice treated with acid.

New work in the Greater Seminole area included Inland Development Co.'s No. 2 Brandenburg, NE SE NW Section 9-7-4, Pottawatomie County, and No. 3 Brandenburg, SW SE NW Section 9-7-4, both locations; Mid-Continent Petroleum Corp.'s No. 1-A Bewley, NW SE Section 9-7-4, rigging up rotary, and No. 2 Bewley, NE NW NE Section 9-7-4, a location; same operator's No. 3 Robbins, NE cor. SW Section 9-7-4, a rig; Magnolia Petroleum Co.'s No. 3 Tarter, NW NE SW Section 15-7-4, rig on the ground; L. L. Russell's No. 1 White, NE cor. NW Section 15-7-4, rig on the ground; Sinclair Prairie Oil Co.'s No. 5 Brandenburg, SW cor. Section 7-7-5, rig; Limestone Oil & Gas Co.'s No. 14 Walker, C W half NE NE Section 15-7-8, a rig; Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Sarkey, NE NW SE Section 31-7-8, cellar and pits.

### Pontotoc Developments

In the Beebe area, Pontotoc County, Los Angeles Petroleum Co. completed No. 1 Flatt, NE cor. SE Section 36-5-4, a Hunton lime well at 2,198-2,200 feet, total depth. It started off at 450 bbls. in 24 hours late in April but was completed as a 100-bbl. producer.

Moore & Deaner's No. 3 Gray, NE SE NE Section 25-5-4, was shot with 80 quarts at 2,251-64 feet and swabbed 84 bbls. in 24 hours. It was completed. No. 4 on the lease had 1,300 feet of oil in the hole from Viola lime at 2,413-41 feet and was to be given a swabbing test.

Premier Investment Co.'s No. 3 Layne,

(Continued on Page 94)

# Kansas Commission Posts Allowables for July; Rice and McPherson Counties' New Pools

By JAMES McINTYRE

In line with the order of Secretary of the Interior Ickes, who is also Federal petroleum administrator, fixing the allowable production of Kansas for July at 134,500 bbls., the Kansas Corporation Commission met on June 29 and made the allocations for the pools of the State for the month. The commission fixes the potential at 323,069 bbls. from 19,194 wells, and the percentage of allowable runs from 16.15 per cent in the flushest pools to 100 per cent for the old strippers making less than 5 bbls. per day.

Among the allowables are the following: Chase, Rice County, 5,002 bbls.; Cunningham, Kingman County, 1,826 bbls.; Graber (new pool), McPherson County, 171 bbls.; Greenwich, Sedgwick County, 2,375 bbls.; Hollow, Harvey County, 10,298 bbls.; Johnson, McPherson County, 1,926 bbls.; Nikkell, McPherson County, 7,685 bbls.; Raymond, Rice County, 2,124 bbls.; Ritz, McPherson County, 14,617 bbls.; Valley Center, Sedgwick County, 2,110 bbls.; Voshell, McPherson County, 6,805 bbls.

There are 14,215 stripper wells in Kansas with a potential production of 16,365 bbls., ranging from a small fraction of 1 bbl. up to 4.99 bbls. per day. These are permitted to produce all they can. In addition to these, 2,607 other wells have a potential of 20,364 bbls., or an average of 7.7 bbls. per day. Of the total allowable production of the State, 2,372 wells will produce 100,092 bbls., or an average of 42.2 bbls. per day.

The Continental, Empire and Shell companies' No. 1 Bennett, in Section 25-18-8w, Rice County, may be completed this week. It was to have started a pumping test on Monday, when this was written. It has shown indications of being close to a 1,000-bbl. well on the swab. It opens a new producing spot in the county. The Continental Oil Co.'s No. 1 Graber opened a new pool in McPherson County with a well that started off at better than 800 bbls. per day.

### Daily Average Production

Estimated daily production of important pools in Kansas for the week ending June 30 and for the preceding week was as follows:

| Pool— | Barrels June 30 | Barrels June 23 |
|---|---|---|
| Hollow | 9,873 | 10,455 |
| Ritz-Canton | 14,680 | 14,180 |
| Voshell | 7,160 | 7,525 |
| Johnson | 2,065 | 1,988 |
| Sedgwick County | 7,530 | 7,210 |
| Nikkell | 6,250 | 6,285 |
| Ellsworth County | 3,436 | 3,214 |
| Barton County | 1,425 | 1,282 |
| Rice County | 13,899 | 11,535 |
| Reno County | 3,904 | 3,910 |
| Ellis County | 575 | 570 |
| Kingman County | 1,790 | 1,901 |
| Stafford County | 1,130 | 1,146 |
| Russell County | 7,580 | 6,120 |
| Greenwood County | 12,250 | 12,250 |
| Butler County | 17,700 | 18,000 |
| Other pools | 20,083 | 19,784 |
| Total | 131,330 | 127,355 |

### Ellis County

Davis and others' No. 2 Weiland B, NE NW NE Section 1-13-16w, Ellis County, was acidized at 3,012-63 feet and started at 154 bbls. per day. It was completed.

Ashby and others have rig up for No. 1 Mermis, NW cor. NE Section 34-13-16w.

### Russell County

Tom Palmer has another good well, No. 1 Borrell, NE cor. SE Section 21-13-14w, in Russell County. It was completed in pay at 3,268-81 feet, after it had tested 692 bbls. in 24 hours on the pump.

Central Petroleum Co. made a location for No. 2 Benso, NE cor. NW Section 4-14-15w, and for No. 2 Dortland B, SE NW NW Section 4-14-15w.

Empire Oil & Refining Co.'s No. 1 Bender A, NW NE NE Section 26-15-14w, was completed, a 335-bbl. pumper, from Siliceous lime at 3,340-49 feet, which had been acidized.

### In Rice County

Elwell and others made a location for No. 1 Campbell, SW SW Section 20-17-7w, Rice County, and for No. 1 Porter, NE NW Section 5-18-7w.

Continental Oil Co. was running tubing in No. 1 Lansing, NW cor. SE Section 25-18-8w, which had swabbed 899 bbls. from Siliceous lime at 3,132-72 feet.

Ramsey and others' No. 2 School Land, NE SW NW Section 32-19-9w, was completed. It was acidized in Siliceous lime at 3,246-68 feet and started at 239 bbls. per day.

Gypsy Oil Co.'s No. 4 Malone, NE cor. NW Section 18-20-9, was a 350-bbl. completion after an acid treatment in Siliceous lime at 3,318-23 feet.

### Barton County

Stanolind Oil & Gas Co. completed No. 3 Hauser, C NE NE Section 16-20-11w, Barton County, a 700-bbl. natural well from Siliceous lime at 3,288-99 feet.

### McPherson County

Lario Oil & Gas Co. and Shell Petroleum Corp.'s No. 2 Lagree, deepened from 3,393 feet to 3,455 feet, found water and was plugged back to 3,400 feet.

Olson Oil Co. and Shell Petroleum Corp.'s No. 1 Russell, C SE SE Section 3-19-2w, deepened from 2,956 feet was drilling at 2,961 feet. General Petroleum Co. made a location for No. 1 Johnson, SE SE Section 4-19-2w.

Broswood and others' completed No. 4 Giffin, C E half W half SW Section 14-19-2w. It started at 786 bbls. after an acid treatment in Viola lime at 3,368-78 feet.

W. C. McBride, Inc.'s No. 7 Giffin, CWL E half SW Section 14-19-2w, was a 625-bbl. completion from Viola lime at 3,377-83 feet, which had been acidized.

Roth & Farout had cellar dug for No. 2 Almen, SE SW SE Section 13-19-3w.

Continental Oil Co. and others' No. 1 Graber, NE cor. NW Section 32-21-1w, was acidized in Hunton lime at 3,274-98 feet and responded with an 870-bbl. production.

Derby Oil Co. and others' No. 1 Hamm, SE SW NE Section 33-21-3w, Nikkell Pool, was good for 707 bbls. initially from pay at 3,440-53 feet and was completed.

J. E. Mabee, Inc.'s No. 8-B Nikkell, NE NW SE Section 33-21-3w, was acidized at 3,455-64 feet and started with a 1,609-bbl. daily production. It was completed.

### Harvey County

Sinclair Prairie Oil Co.'s No. 2 Schroeder A, SE NW SE Section 5-22-3w, Hollow Pool, Harvey County, was acidized at 3,505-29 feet and started at 421 bbls. It was completed.

Empire Oil & Refining Co.'s No. 2 Froese, NE SE SE Section 7-20-3w, had Wilcox sand at 3,539-60 feet and shot it with 20 quarts. It produced 277 bbls. of oil and 35 bbls. of water and was completed.

Murray and the Texas Co.'s No. 2 Dyck, NW NE SW Section 8-22-3w, was acidized at 3,435-3,500 feet and showed 4 bbls. production. The hole was abandoned.

### Reno County

Barnsdall Oil Co. made locations for No. 3 Sabin B, NW SE NE Section 11-23-4w, Reno County, and for No. 4 Sabin, NE NW NE Section 11.

Olson Oil Co.'s No. 3 Roberts, C NW SW Section 25-23-4w, was acidized in pay at 3,370-74 feet and the well pumped 347 bbls. in 24 hours. It was completed.

Duwe and others had ponds dug for No. 1 Milburn, C SW SE Section 24-24-8w, and Skelly Oil Co. had pond dug for No. 2 Smith, C SE SW Section 24-24-8w.

### Kingman County

In the Cunningham Pool in Kingman County Skelly Oil Co.'s No. 2 North Tacliff, SE cor. SW Section 19-27-10w, had Lansing lime at 3,417 feet, total depth 3,492 feet. It was acidized and the well started at 300 bbls. of net oil. It was completed.

Kessler and others' No. 1 Bolinger, SW NW SW Section 12-28-5w, Section 12-28-5w, was dry and abandoned at 4,226 feet.

Cooper and others' No. 1 Erickson, CNL SE SW Section 17-24-13, Greenwood County, was acidized in lime at 1,578-1,602 feet and produced 176 bbls. of oil and 25 bbls. of water. It was completed.

Theta Oil Co.'s No. 7 Estes, CWL SE NW Section 7-24-14, Woodson County, started at 14 bbls. per day after an acid treatment at 1,708-14 feet. Completed.

Ward McGinnis had machine in for No. 1 Sample, NE cor. SE Section 16-25-10. Greely and others were rigging up No. 1 Reed, SW SE SW Section 18-25-12.

Sheedy and others' No. 1 Hassenpflug,

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## Wildcat Operations in Kansas

Week Ending June 30

(Descriptions are East unless marked otherwise)

**BARBER COUNTY**

Lario O. & G. Co.'s No. 1 Whelan, C NW Sec. 32-31-11w.
Set 15½-in. pipe 205 ft.

**BARTON COUNTY**

Atlantic O. P. Co.'s No. 1 Straub, C SE NW Sec. 36-18-11w.
Drlg. 1,340 ft.

Harris & Haun and J. Brook's No. 1 Dietz, NE SW Sec. 21-16-15w.
Rig.

National Ref. Co.'s No. 1 Ingersoll, C NW NE Sec. 2-19-13w.
T.D. 1,810 ft.; fishing.

Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w.
P.B. to 3,265 ft.; acidized; S.D.

Walter Shearen et al's No. 1 Kempler, SE NE NE Sec. 31-18-11w.
S.D. 300 ft.

**BUTLER COUNTY**

DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3.
Rig.

L. C. Hay et al's No. 1-A Bolin, SE SW SE Sec. 36-26-6.
K.C. lime 2,159-62 ft.; acidized.

Tom Palmer et al's No. 1 Thompson, NE SW Sec. 2-24-3.
Drlg. 1,490 ft.

Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4.
Rig.

**CLAY COUNTY**

Seidel Bros.' No. 1 Youkers, C S½ SE NW Sec. 21-9-4.
Drlg. 250 ft.

Sievers et al's No. 1 Myers, NE NW NW Sec. 4-10-4.
Drlg. 1,200 ft.

**DICKINSON COUNTY**

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1e.
Drlg. 1,770 ft.

**ELK COUNTY**

Diller O. & G. Co.'s No. 1-A Keys, C E½ SE NE Sec. 26-31-10.
Oil showing 1,644-50 ft.

Lerke et al's No. 1 Mason, C NE NE Sec. 5-31-10.
H.F.W. 1,564 ft.; S.D.

B. Taylor et al's No. 1 Wilson, SE NE SE Sec. 5-28-10.
Machine.

**ELLIS COUNTY**

Ashby et al's No. 1 Mermis, NW cor. NE Sec. 34-13-16w.
Rig.

**FINNEY COUNTY**

National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w.
T.D. 1,800 ft.; S.D. for orders.

**GREENWOOD COUNTY**

Ward McGinnis' No. 1 Sample, NE SE Sec. 16-25-10e.
Machine.

**HARPER COUNTY**

R. G. Berry's No. 1 Anthony, C SW SW Sec. 17-31-9w.
Fishing 3,485 ft.

Indian Territory Illuminating Oil Co.'s No. 1 George, C SE SW Sec. 12-33-10w.
Rotary rig.

**HARVEY COUNTY**

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
Cellar.

Hollow et al's No. 1 Swafford, NW NE NW Sec. 8-22-1w.
Moving in material.

Wenzel et al's No. 1 Schrag, NW SE Sec. 24-22-3w.
Rig.

Lassen, Bruce et al's No. 1 Joseph, NW NE Sec. 13-24-2.
Spudded and S.D.

**KINGMAN COUNTY**

Kessler et al's No. 1 Bollinger, SW NW SW Sec. 12-28-5w.
Dry and abd. 4,226 ft.

W. C. McBride, Inc.'s No. 1 Wolbridge, NW SE Sec. 16-27-7w.
Spudding 140 ft.

Stanolind-Amerada's No. 1 Holtje, NE SW Sec. 16-26-4w.
Rig.

**LYONS COUNTY**

Arkman & Baker's No. 1-A Hind, NE NW Sec. 30-21-12.
Drlg. 1,075 ft.

**McPHERSON COUNTY**

Continental Oil Co.'s No. 1 Graber, NE NW Sec. 32-21-1w.
Hunton 3,274-98 ft.; pumped 870 bbls. in 24 hrs.; completed.

Marileen Oil and Goering Bros.' No. 1 Decker, NW cor. SE Sec. 20-18-1w.
T.D. 1,995 ft.; drilling iron.

**NEMAHA COUNTY**

Partland & McKenna's No. 1 Sudbeck, SW NW NW Sec. 20-1-12.
Top granite wash 490 ft.; S.D.

**OSAGE COUNTY**

Jim Edwards' No. 1 Detrich, C NW SE Sec. 21-14-15.
Machine.

**OSBORNE COUNTY**

Carmen & Hershey's No. 1 Fritz, C NE NE Sec. 9-10-14w.
Drlg. 700 ft.

**RENO COUNTY**

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
Ponds.

L. H. Wentz' No. 1 Metcalf, SE NE SW Sec. 3-24-7w.
Drlg. U.R. lugs; T.D. 2,925 ft.

Sinclair Prairie Oil Co.'s No. 1 Shepard, SE cor. NW Sec. 22-26-9w.
Coring at 4,124 ft.

**RICE COUNTY**

Aylward & Trees' No. 1 Belder, SW SE NE Sec. 27-20-7w.
Drlg. 3,340 ft.

Continental, Empire and Shell's No. 1 Bennett, NW SE Sec. 25-18-8w.
Siliceous lime 3,132-75 ft.; swbd. 940 bbls. 21 hrs.; S.D.

Deltrick et al's No. 1 Fitzpatrick, C NE NE Sec. 30-21-8w.
U.R. 10-in. csg. 1,975 ft.

Elwell et al's No. 1 Springer, NE NW Sec. 25-18-10w.
S.D. 2,440 ft.

Gypsy Oil Co.'s No. 1 Malone, SE NE NE Sec. 30-20-9w.
Drlg. 3,000 ft.

Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w.
T.D. 2,425 ft.; fishing.

Reserve Dev. Co.'s No. 1 Heinz, NE SW SE Sec. 8-18-10w.
Siliceous lime 3,256-69 ft.; T.D.; acidized; 10 bbls. in 14 hrs.; pumped off.

Robertson et al's No. 1 Johnson, NW cor. SW Sec. 22-19-8w.
Drlg. 1,000 ft.

**ROOKS COUNTY**

Ashby et al's No. 1 Doughty, C SW SW Sec. 15-8-19w.
Drlg. 1,835 ft.

Phillips Pet. Co.'s No. 1 Dopita, C SW SW Sec. 31-8-17w.
Acidized 3,312-17 ft.; pumped 103 bbls. oil, 11 bbls. wtr. in 14 hrs.; testing.

**RUSH COUNTY**

Central States L. & P. Co.'s No. 1 Basgall,

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# North Louisiana Shows 12 Completions, But an Even Greater Number of New Locations

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., July 2.—The North Louisiana district came back to life during the past seven days with 13 new locations staked and 12 completions. There were no outstanding developments or disappointments as none of the hot wildcats had reached the testing stage, but a period of active drilling is indicated both in proven and unproven areas.

The 12 completions consisted of seven gas wells, two oil wells and three dry holes.

The Blanchard Field in Caddo Parish furnished two small gassers from the Nacatoch sand around the 900-foot level. Nick Barbare's No. 1 T. C. Lindsey, Section 34-19-16, had an initial flow of 2,500,000 feet from 933 feet, and Producers Oil & Gas Co. and Pyramid Oil & Gas Co.'s No. 1 J. H. Bayliss, Section 3-18-16, gauged 2,800,000 feet from 937 feet. All of the drilling recently in this field has been for the shallow producing horizon which yields consistently a small flow from the Nacatoch. The drilling is inexpensive, the operators setting a short string of surface casing and 2½-inch tubing with packer over the pay sand.

In the Sugar Creek Field, Claiborne Parish, the United Gas Public Service Co.'s No. 1 Carter Unit, Section 32-20-5, was a disappointment although the well extended the field to the east. The gauged flow was only 1,300,000 feet with 1,025 pounds rock pressure from Oolitic lime in the Glen Rose from a total depth of 4,385 feet.

Two areas in the Monroe Field completed three ordinary gassers. In Morehouse Parish, James A. Noe's No. 1 Dalton and others, Section 41-21-3e, had an initial open flow of 4,336,000 feet with rock pressure at 610 pounds from 2,286 feet. In the Ouachita Parish area, the Arkansas-Louisiana Pipe Line Co.'s No. 8 McEnery, Section 21-19-4e, was a 1,000,000-foot gasser at 2,169 feet, and the same company's No. 9 Rea-Green, Section 33-19-4e, gauged 1,312,000 feet of dry gas from 2,194 feet. Sabine Parish reported the rare instance of a gas well with the completion of George L. Pace's No. 1 DeSoto Corp., Section 27-10-13, 2½ miles north of Converse production. The well is making 1,000,000 feet with 640 pounds rock pressure from 1,943 feet, and the gas will be used to drill other wells in the vicinity in search of an oil-bearing sand underlying the gas.

### Week's Best Producer

The best producer of the week and the only one reported from the Zwolle-Converse district was Monroe Production Co.'s No. 6 Sabine Lumber Co., Section 12-7-12, in the East Zwolle Field. The well is flowing 350 bbls. daily from 2,418 feet. In an old semiproven area of DeSoto Parish, the Sunrise Oil Co., formerly carried as Berry Oil Co.'s No. 1 Wemple, Section 14-12-11, is pumping 75 bbls. from 2,665 feet. In Caddo Parish, the Chief Refining Co.'s No. 1 Powell, Section 14-19-15, west of the Dixie Field, encountered salt water and was abandoned at 2,440 feet. The test had set 7-inch casing at 2,371 feet after reporting a show of oil at 2,394 feet. Hirschfield-Bailey's No. 1 Youngblood, Section 9-11-14, DeSoto Parish, was abandoned without a test at 1,502 feet. In the Zwolle Field, the Texas Co.'s No. 1 W. G. Bilbray, Section 32-8-11, failed to hit a crevice in the chalk rock and was abandoned as dry at 2,625 feet.

### New Locations

Of the 13 new locations staked in the North Louisiana district, five were in Caddo Parish and six in Sabine Parish, all in proven or semiproven territory. The Shore Line Oil Corp. is following up its announcement of several months ago of an extensive drilling campaign in the Hosston area, Caddo Parish. The company has started three new operations in that vicinity, all of the wells to be drilled to the chalk rock horizon around the 1,030-foot level. In the same parish, the Capital Oil & Gas Co. has spudded in and set 10-inch surface casing at 40 feet on its No. 1 Noel estate, Section 12-20-16. The other Caddo location is for a shallow test in the Blanchard gas field. In Red River Parish, W. K. Williams is rigging up on his No. 1 DeMoss estate, Section 33-13-11, a wildcat near the DeSoto and Red River Parish line. The Red River Refining Co. is moving in rig on its No. 1 Tremont Lumber Co., Section 35-11-1w, in the center of a large block of Winn Parish.

### Closely Watched Tests

There are three outstanding wildcats that are being closely watched in as many North Louisiana parishes. L. M. Moffitt, Ohio Oil Co. and Magnolia Petroleum Co.'s No. 1 Antrim Lumber Co., Section 26-22-12, east of Plain Dealing in the northern part of Bossier Parish, has set 10-inch surface casing at 335 feet and is drilling at 915 feet. This well is located on a block of approximately 17,000 acres with good geological and geophysical reports. In the western part of Lincoln Parish, Eastern Texas Production Co.'s No. 1 Given estate, Section 2-17-4, set 10-inch surface casing at 175 feet and is reported to have topped the Nacatoch formation at 2,312 feet. Plummer & McDaniel's No. 1 Walmsley, Section 45-10n-8w, Natchitoches Parish, is making good headway, drilling at 4,220 feet. In the same parish in the Marthaville area, Roy A. Raines and others' No. 1 I. D. Raines estate, Section 28-9-10, is another hot wildcat that will attract attention as it is deepened. The test has set 10-inch at 160 feet and is drilling at 1,900 feet. North of the town of Vivian in Caddo Parish, W. T. Bell and others' No. 1 Bostick, Section 12-22-16, is shut down temporarily after testing dry at 2,526 feet.

### ARKANSAS

This district reported two new operations, both in Union County. The Bellevue Corp., composed of Shreveport operators, has set 10-inch surface casing at 162 feet on its No. 1 J. W. Greening in Section 30-18-15. In the Urbana area, McCreslenn Oil Co.'s No. 1 Union Saw Mill Co., Section 3-18-13, is rigging up. Although no new locations were staked along the Humble Fault in Miller and Lafayette Counties, activity continues brisk in these areas. Earl F. Fox has completed rigging up on his No. 1 Coleman Brothers, Section 36-16-25, west of the town of Lewisville, and waiting on a supply of fuel oil before spudding in. About 7 miles northeast of the Fox test, Benedum & Trees have made a tentative location on a large block recently assembled by Irwin & Wadley of Texarkana. The original lease calls for a 3,000-foot test, but it is understood that the hole will be carried to 4,500 feet if necessary.

In the Bloomburg area, southwest Miller County, W. F. Lacey's No. 1 Gibson, Section 30-19-27, topped the Tokio at 3,342 feet and is temporarily shut down at 3,348 feet. The well is 5 miles southeast of E. L. Young, trustee's No. 1 Patterson, Section 5-19-28, which has been junked after casing collapsed at 2,406 feet with the total depth of 3,655 feet. Several operators, including John Pugh of Pugh-Hickman Drilling Co. of Shreveport, have made arrangements to drill another test in the immediate vicinity of the Patterson well. It is reported that J. K. Wadley and others will drill another test on their block in the Fouke area on which they recently completed a dry hole below the 4,000-foot level. Three wells in the Miller County Field, east of Texarkana are coring or testing the pay sand. The Magnolia Petroleum Co.'s No. 3 Olivet, Section 4-16-26, is testing at 2,983 feet, and the Arkanva Oil Corp.'s No. 2-B E. L. Beck, Section 33-15-26, is fishing for drill stem at 2,923 feet. Lee Timberlake's No. 1 E. L. Beck, Section 33-15-26, is coring at 2,821 feet. A fourth well on the pay, John Wrather's No. 1 Olivet, Section 4-16-26, is waiting on standard rig to pump with 1,500 feet of oil in the hole from a total depth of 2,937 feet.

Of the wildcats in other areas, the Mid-American Oil Corp.'s No. 1 Plunkett, Section 15-14-15, Calhoun County, cored salt water sand at 2,490 feet and is drilling at 2,502 feet. In Lee County, the Arkansas-Louisiana Pipe Line Co.'s No. 1 McDonald, Section 28-1n-4e, is drilling at 1,680 feet. This test is located on a block of approximately 70,000 acres assembled by this company after extensive geophysical surveys.

## Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

**NORTH LOUISIANA**

**AVOYELLES PARISH**

Haas & Stokes' No. 1 Lindstrum Land Co., 690 ft. S, 930 ft. E, NW cor. Sec. 34-1n-6e. Set 12-in. 40 ft.

**BIENVILLE PARISH**

Hibeltha Oil Co.'s No. 1 Woodward, 300 ft. S, 600 ft. E, NW cor. Sec. 26-15-9. Drlg. 3,350 ft.

**BOSSIER PARISH**

Bossier O. & G. Co.'s No. 1 Sherrill, 300 ft. S and W, NE cor. Sec. 13-9-12. S.D.; W.O. 2,261 ft.

Ford & Hanover's No. 1 Cryer, 330 ft. S and W, NE cor. NW SW Sec. 25-19-12. S.D. 875 ft.

Howard & Baird's No. 1 Gold, 150 ft. S and E, NW cor. Sec. 36-20-13. Rigging up.

McKinney & Stewart's No. 1 Nattin, 470 ft. W, 620 ft. S, NE cor. Sec. 22-22-14. Coring 2,885 ft.

Moffitt et al's No. 1 Antrim, 330 ft. N and W, SE cor. SW NE Sec. 26-22-12. Set 10-in. 335 ft.; drlg. 915 ft.

Producers O. & G. Co.'s No. 1 Werner, 660 ft. N and W, SE cor. Sec. 7-17-11. Drlg. 3,601 ft.

Producers O. & G. Co.'s No. 1 Leviston, 660 ft. N and W, SE cor. Sec. 13-16-12. Coring 2,350 ft.

O. P. Shaver's No. 3 Elston, Sec. 10-19-11. Set 6-in. 305 ft.

**CADDO PARISH**

Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon, 330 ft. N and E, SW cor. Sec. 15-20-15. Tested S.W. 1,560 ft.

Nick Babare's No. 1 Lindsey, Sec. 34-19-16. Comp. est. 2,500,000 ft. gas, 933 ft.

W. T. Bell et al's No. 1 Bostick, 1,320 ft. E, 660 ft. N, SW cor. Sec. 12-22-16. Tested dry; W.O. 2,526 ft.

Burkett O. & G. Co.'s No. 1 Lindholm, 400 ft. S and E, NW cor. NE SE Sec. 15-17-14. S.D. 1,046 ft.; repairing rig.

Capitol O. & G. Co.'s No. 1 Noel Est., 300 ft. S and E, NW cor. NE Sec. 12-20-16. Set 16-in. 40 ft.

A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. SE Sec. 4-14-16. S.D. 2,128 ft.

Producers O. & G. Co.'s No. 1 Bayliss, Sec. 3-18-16. Comp. 3,000,000 ft. gas 937 ft.

Simplex Oil Co.'s No. 9 Youree-Randolph, 660 ft. S and W, NE cor. SE Sec. 13-20-16. Drlg. 2,262 ft.

**CALDWELL PARISH**

Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 300 ft. W, SE cor. NW NE Sec. 18-11-3e. Fishing for D.S. 2,855 ft.

**CLAIBORNE—SUGAR CREEK**

United Gas Public Service Co.'s No. 1, 1,390 ft. N, 2,890 ft. E, SW cor. Sec. 32-20-5. Comp. 1,500,000 ft. gas, 4,385 ft.

**DE SOTO PARISH**

L. H. Alderson's No. 1 Peek, SE cor. NW NE Sec. 25-11-13. S.D. for wtr. 2,905 ft.

Berry Oil Co.'s No. 1 Wemple, Sec. 14-12-11. Comp. pumping 75 bbls., 2,665 ft.

R. E. Collins' No. 1 Thigpen, 515 ft. N, 970 ft. E, SW cor. NW NE Sec. 29-15-12 S.D.; W.O. 2,805 ft.

Dempsey & Manziel's No. 1 Thigpen, 375 ft. S, 330 ft. W, NE cor. SW NE Sec. 33-13-13. S.D. for wtr. 1,605 ft.

Gaskill et al's No. 2 Guy, 370 ft. S and W, NE cor. NW SE Sec. 3-11-13. Arranging to test 1,735 ft.

Hirschfield-Bailey's No. 1 Youngblood, Sec 9-11-14. Dry and abd. 1,502 ft.

Geo. M. LeGrande's No. 1 Fulmer, 200 ft. N and W, SE cor. NW SW Sec. 1-11-16. S.D. 1,750 ft.

J. S. Tuffree's No. 1 McGill, 450 ft. N, 150 ft. W, SE cor. SW SE Sec. 1-10-13. S.D. 2,125 ft.

**LINCOLN PARISH**

Eastern Texas Prod. Co.'s No. 1 Givens Est., SW cor. NE Sec. 2-17-4. Set 10-in. 175 ft.; drlg. 1,700 ft.

**MOREHOUSE PARISH**

James A. Noe's No. 1 Dalton, 3,445 ft. N, 805 ft. W of common cor. Sec. 41-21-5e Using acid 2,285 ft.

Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-6e. Coring 2,880 ft.

**NATCHITOCHES PARISH**

Jack Let's No. 1 Brown Lbr. Co., 400 ft. S, 300 ft. E, NW cor. NE SW Sec. 27-9-13. Rigging up.

Missouri Drlg. Co.'s No. 1 Brown Lbr. Co., 400 ft. N, 330 ft. W, SE cor. Sec. 5-10-10. S.D. for wtr. 540 ft.

Penn Sou. Pet. Co., Inc.'s No. 1 Chopin Lbr. Co., 275 ft. N and W, SE cor. NE SW Sec. 4-5n-5w. S.D. 3,500 ft.

Plummer & McDaniel's No. 1 Walmsley, SE SW Sec. 45-10n-8w. Drlg. 4,220 ft.

Roy A. Raines et al's No. 1 Raines est., 330 ft. N and E, SW cor. Sec. 28-9-10. Drlg. 1,900 ft.

J. B. Storey's No. 1 W. W. Page est., NE cor. SE NW Sec. 18-8-9. S.D. for rig repair 1,480 ft.

**OUACHITA PARISH**

Ark.-La. P. L. Co.'s No. 10 Rea-Green, 1,-

(Continued on Page 87)

### Daily Average Production

Estimated daily gross production of all companies week ending June 29:

**NORTH LOUISIANA**

| | |
|---|---|
| Caddo, light | 4,610 |
| Caddo, heavy | 1,540 |
| Converse | 1,660 |
| Cotton Valley | 560 |
| DeSoto and Red River | 1,515 |
| Elm Grove | 355 |
| Haynesville | 3,880 |
| Holly | 185 |
| Homer | 2,670 |
| Pleasant Hill | 210 |
| Sarepta-Carterville | 740 |
| Urania | 2,990 |
| Zwolle | 4,325 |
| Total North Louisiana | 25,240 |

**SOUTH ARKANSAS**

| | |
|---|---|
| Champagnolle | 1,225 |
| El Dorado | 2,425 |
| Lisbon | 370 |
| Miller County | 1,385 |
| Nevada | 900 |
| Smackover, light | 2,420 |
| Smackover, heavy | 19,810 |
| Stephens | 625 |
| Urbana | 2,375 |
| Total South Arkansas | 31,535 |

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# Among Gulf Coast Drilling Contractors

Rutherford Drilling Co. has set surface casing at 904 feet on a well for the Southland Oil Co., located approximately 1½ miles southwest of the discovery well at Calallen, Tex., Nueces County. This well is carried as No. 1 Noakes. Rutherford is also drilling ahead on No. 1 Drummond, three-quarters mile west of the Encino Gas Co.'s discovery well at Vanderbilt, Tex. This well is for the Phillips Petroleum Co., who purchased the interests of the Encino Gas Co.

T. B. Cochrane has spudded in a well for the Southland Oil Co. near Little York, Harris County, Texas. This is a wildcat and is carried as Southland Oil No. 1 Galvey.

Harvey Smith is drilling a well for the Vico Oil Co. in the E. Powell Survey, southwest of Beasley, Fort Bend County. This will be carried as No. 1 H. R. Darst.

George Echols has 11 rigs running at this time. Jointly with Ralph Townley he is drilling a well at Manvel for the Windsor Oil Co. One rig is running in East Texas for the Houston Oil Co. Two rigs are running at Odom, San Patricio County, one for the Circle-W Oil Co. and one for the Continental Oil Co. and Atkins-O'Neil. One rig is running for the Houston Oil Co. at Refugio, and two for the Humble Oil & Refining Co. in the Greta Field. One is running for the Sun Oil Co. and the Magnolia Oil Co. in San Diego district, and three are running in Starr County, two for the Sun company and one for the Windsor Oil Co.

Smith & McDannald have eight rigs running at this time, three in the Boscoe Field for the Superior Oil Co., one at Cayuga for the Tide Water Oil Co., one in Greta for the Stanolind Oil & Gas Co., and two at Louise for the Pure Oil Co.

John Deering is drilling a well for Deering & Frazier about 7 miles southwest of Conroe in Montgomery County.

C. & R. G. Drilling Co. (Gus Cormier) is preparing to drill No. 1 Frank Truska for the Gillock Petroleum Co., 5 miles southeast of Alvin in Brazoria County. Derrick is up and rig will be moved in shortly.

John Camp has just finished a well for the Petrol Corp. in the Coleto Creek Field, and is rigging up to drill a well for himself about 2,500 feet due west of the well just completed.

Bud Coyle is drilling a well for the Republic Production Co. at Ariola, and one well for the Federal Petroleum Co. near DeQuincy, Beauregard Parish, Louisiana.

Steen Drilling Co. has one rig on a reconditioning job on a well, located on a 16,000-acre tract which has been taken over by the company, near Nursery, Tex. The well has been completed as a gasser good for several million feet daily, with some oil showing. The company also has one rig running on properties owned by the company in the Converse Field, Louisiana, and two rigs running for the Landreth Production Co. in Ector County, Texas.

C. & C. Drilling Co. has started up on a well for the Gem Oil Co. near Needville, Fort Bend County, which will be drilled to 6,000 feet unless production is found higher up. The company also has one rig running for the Phillips Petroleum Co. in the Vanderbilt Field.

Jeff Hooper has one rig running, and one setting up for the Shell Petroleum Corp. at Danbury, Brazoria County, Texas. These holes will be drilled to approximately 1,900 feet in shallow production held by the company.

Edwards Drilling Co. is drilling on its well for the Woodley Petroleum Co. at Church Point, Louisiana. The company also is preparing to finish its second well in the Goose Creek Field, on acreage held by the company.

Showers & Moncrief have a rig running on their own properties in the Conroe Field.

Frank Long has one rig running in the Manvell area for Jack Clark and one in East Texas for Albert Plummer.

Organization of the Gulf Coast Rig Building Contractors Association was perfected at a recent meeting of rig builders in Houston. The organization will become affiliated with the National Rig Building Employers Association.

Officers elected for the Gulf Coast association are: Jesse Hester, president; L. W. Campbell, vice president; J. Ray McDermott, secretary-treasurer, and M. J. Brown, Ralph Smith, D. H. Gunn, W. J. Davis and G. A. Prunty, directors. Charter member companies are Ralph Smith Rig Building Co., T. J. Gilmore, Gunn Brothers, W. J. Davis, Inc., Campbell & Locke, Harry Allsman, J. Ray McDermott & Co., all of Houston; Hester Brothers, Humble, and G. A. Prunty, West Columbia.

*After completing several contract wells in the past year, F. R. Flannigan (right) acquired a lease in the Mykawa Field, Harris County, Texas, and has drilled two good producers. No. 1 Framar Oil & Gas is shown herewith. Standing beside Mr. Flannigan is W. A. Weatherill, tool pusher*

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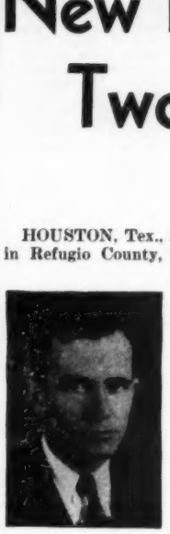
# New Field Opened in Refugio County District; Two Cockfield Producers at Raccoon Bend

By A. C. EASTERWOOD
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., July 2.—A new field in Refugio County, two good producers in the newly discovered Cockfield sand at Raccoon Bend in Austin County, favorable indications for production in the second Cockfield sand test at Sour Lake in Hardin County, along with several very important tests nearing their critical depths, furnished a very active week for the Gulf Coast district. Quintana Petroleum Co. opened a new producing area when its No. 1 O'Connor, on a torsion balance prospect about 8 miles northeast of the town of Refugio and 3 miles southeast of the Greta Field, came in for a good producer with estimates running as high as 1,000 bbls. daily. The rank wildcat gave first indications of making a producer last week when on a 10-minute drill stem test from 5,555-75 feet it built up a pressure of 160 pounds and showed 10 fourbles of oil with one-fourth inch choke on top and five-sixteenths inch choke on bottom. Plugs were drilled and the head of gas was allowed to blow off through three-eighths inch choke and showed a tubing pressure of 950 pounds and a casing pressure of 1,000 pounds, and based on this 15-minute test the well has been estimated good for 750 to 1,000 bbls. of 38.8 gravity oil daily. It had sand from 5,569-75 feet, which is the present total depth. It was shut in awaiting the erection of two 1,000-bbl. tanks and a separator. The well is near the center of the operators' 4,000-acre block. The Quintana company is reported to have originally paid $62,000 bonus and $2,000,000 out of one-quarter of the first oil produced for the block and is also reported to have recently sold a half interest in its holdings to Humble Oil & Refining Co. Operators have recently selected an additional 4,000 acres to the southwest, and under the agreement can still take more acreage if necessary.



Due to the lack of open acreage around the well, the area will probably not get a sensational lease play, but it is reported operators have an active drilling program scheduled.

### Raccoon Bend

Of great importance was the completion of two additional wells in the Cockfield sand at Raccoon Bend in Austin County. This brings the Cockfield producers to three. The discovery well, Humble Oil & Refining Co.'s No. 1 Zeiske, on the east flank of the field, was recently completed for 392 bbls. daily from sand 4,016-17 feet.

Humble Oil & Refining Co.'s No. 2-B Remmert, 1,000 feet east of No. 1 Zeiske, came in flowing at the rate of 43 bbls. per hour through three-eighths inch choke with total depth of 4,142 feet. It topped the Cockfield at 3,900 feet actual or 3,739 feet subsea, and had oil sand from 4,123-34 feet. The 7-inch casing was cemented at 4,114 feet. Humble's No. 13 Thompson, offsetting No. 5 Sherrod, and in the W. C. White Survey, came in flowing at the rate of 35 bbls. daily through three-eighths inch choke with total depth of 4,152 feet. It topped the Cockfield 3,830 feet actual or 3,662 feet subsea and set 7-inch casing at 4,016 feet. Humble's No. 3 Effie Kearns failed to find production in the Cockfield after drilling to 4,750 feet. It tested salt water in sand from 4,207-12 feet and later plugged back to 3,432 feet and will endeavor to complete in the shallow sand. At last report it was drilling 3,437 feet in sand. Humble has started two more tests for the Cockfield, No. 3 McCasland, 153 feet in hard sand, and No. 5-B Wilson, 148 feet in shale.

### Sour Lake

At Sour Lake, in Hardin County, Alpha Petroleum Co.'s No. 1 J. M. Weiss showed good possibilities of making a producer in the Cockfield sand at 6,823 feet. The well topped the Cockfield at 6,818 feet, where 7-inch casing has been cemented. It is reported to be running about 125 feet higher than Parr's well, a diagonal offset northeast. Plugs will probably be drilled about the middle of the week. The well topped the Hockley at 6,339 feet. Parr and others' No. 1 Benard, first well to drill to the Cockfield, was making between 25 to 30 bbls. daily. Operators have not been able to bring the well in since it was first killed to reset screen. Before killing, it was estimated good for 1,000 to 1,500 bbls. daily. Humble Oil & Refining Co.'s No. 1 Kirby and others, in the S. Jackson Survey, was drilling shale 1,965 feet.

Of great importance is the test of Yount Lee Oil Co.'s No. 6 Lynn, at Sour Lake, which gave indications of uncovering a salt overhang. The well has drilled 3,214 feet of salt and late in the week had drilled out of the solid salt and was going ahead 6,894 feet in salt and shale. If an overhang is uncovered it will cause a very extensive drilling campaign and in all probability start an exploration program for overhangs on many other old domes.

At Saratoga, in Hardin County, Sinclair Prairie Oil Co.'s No. 1 Teel Estate, on the south flank of the dome, was drilling 4,775 feet. Operators are endeavoring to uncover Cockfield sand production in this area.

Wilcox Oil & Gas Co.'s No. 1 Sternberger, in the C. Dorsey Survey No. 1, topped the Oligocene 3,383 feet and encountered top of Discorbis 3,407 feet. At last report it was drilling 3,414 feet in shale.

### Cleveland Area

In the Cleveland area of Liberty County, Gulf Production Co.'s No. 4-C Kirby, west of the discovery well, was drilling shale at 5,742 feet. It had a slight odor of oil in sand and shale from 5,703-07 feet. It topped the Uvigernia 4,612-22 feet, had Massilina Pratti 4,711-21 feet, topped Hockley 4,761-71 feet and encountered top of Camerina 5,590-5,600 feet. Surface elevation is 133 feet. Gulf's No. 2-C Kirby, south of the discovery well, was drilling medium gray shale in second sidetracked hole at 5,892 feet. It cored 2 feet of sand with a gas odor from 5,788-91 feet, had sand with an odor of oil from 5,887-90 feet and an odor of oil in sand from 5,890-91 feet.

Northwest of Hardin and centering around the east side of the H. B. Johnson Survey, Greer & Frazier are reported to be working up a 4,500-acre block for a deep test. The well is reported scheduled to be carried to 7,500 feet.

### San Jacinto County

North of the Cleveland area and across the line in southeastern San Jacinto County, Turnbull & Irwin's No. 1 Peoples State Bank, in the J. D. Martinez Survey No. 4, was drilling 1,750 feet. Phillips Petroleum Co.'s No. 1 Foster Lumber Co., in the George Taylor Survey, was drilling shale at 2,800 feet.

### Waller County

At San Felipe Dome in southwestern Waller County, L. W. Capps and S. J. Sloan's No. 1 Vaughn, topped sand with a good show of oil at 2,854 feet. It cored 2,907-24 feet and had 10 feet of shaley sand with an odor of oil, 3 feet of sandy shale with a good show of oil, and 4 feet of green sandy shale with an oil odor. On a drill stem test from 2,854-2,924 feet in 10 minutes through three-eighths inch chokes on top and bottom it registered no pressure and showed 25 fourbles of brackish water. At last report it was shut down waiting orders.

### Brazoria County

Two important wildcat tests are scheduled to start within a few days in Brazoria County. Amerada Petroleum Corp.'s No. 1 Houston Farm Development Co. in the L. Bachelder Survey No. 156, was rigging up and preparing to spud. This will be an 8,000-foot test and is on a block of approximately 7,000 acres on the east bank of Chocolate Bay and south of Liverpool, in Rattlesnake Mound. Gillock Petroleum Co.'s No. 1 Frank Truksa, in the H.T.&B. Survey No. 7, in the eastern part of the county and about 5 miles southeast of Alvin, was building derrick. This is to be a 6,000-foot test and is on a block of 3,000 acres.

At Manvel, in Brazoria County, Texas Co.'s No. 1 W. D. Morrison, east of production, has been completed in the Miocene at 3,873 feet for 446 bbls. of 23.8 gravity oil daily through one-quarter inch choke with a tubing pressure of 990 pounds. East of the above well, Texas Co. was rigging up for No. 2 Houston Oil Field Association in Lot 43. Northeast of production and in the center of Lot 15, A.C.H.&B. Survey No. 91, Abercrombie & Harrison's No. 1 Lewellyn, was completed for 25 bbls. per hour through one-half inch choke with a tubing pressure of 170 pounds. It topped sand at 3,976 feet and bottomed hole at 4,003 feet. On the south side, Texas Co.'s No. 1 John Groce, in the H.&T.B. Survey No. 74, bottomed hole at 5,150 feet in the deep Oligocene and has been completed for 558 bbls. daily through one-quarter inch choke, 4 per cent wash water. It showed a pressure of 510 pounds on tubing and 720 pounds on casing. Texas Co.'s No. 10-B Belcher, also in the south part of the field, was completed for 563 bbls. daily through one-quarter inch choke with 2 per cent wash water. Total depth is 5,105 feet in the Oligocene.

### Galveston County

In Galveston County, about 4 miles south of Dickinson, George K. Spoor's (Gillock Petroleum Co.) No. 1 Maco Stewart, was shut down at 6,577 feet.

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reinforcing derrick to carry the well deeper. Humble Oil & Refining Co.'s No. 1 Maco Stewart, about 3 miles north of Spoor's well, was drilling 4,425 feet in shale.

### Harris County

Just west of the Houston city limits in Harris County, Loring Oil Co.'s No. 1 Westmoreland, was drilling 3,700 feet. General Crude Oil Co.'s No. 1 Rorick Estate, in the John C. Ogburn Survey, west central part of the county, had set surface casing and was waiting on cement at 750 feet. About 5 miles north of Goose Creek and in the Ashbell Smith Survey, J. E. Seiber's No. 1 Tyrell & Gareth, has been abandoned as dry with total depth of 6,960 feet.

Goose Creek in Harris County marked up two completions. Gulf Production Co.'s No. 18-A Tabb, in the William Scott Survey, was completed for 404 bbls. daily at 4,475 feet. Thomas Drilling Co.'s No. 1 Jones was abandoned with total depth of 5,108 feet in sand.

### Montgomery County

In Montgomery County, Deering & Frazier's No. 1 L. Hicks, in the T. Taylor Survey, was drilling hard shale at 4,200 feet. It drilled base of Frio at 3,370 feet.

### Conroe Field

There are now 26 wells in the Conroe Field making water, nine in the central portion, four in the northeast part, two in the north end, five in the southeast part, two in the southern part, three in the northwest portion, and one in the western part of the field. The water level ranges from minus 4,885 feet to minus 5,021 feet. Hamil & Smith's No. 1 South Texas in the T.&N.O. Survey, was making from 8 to 10 per cent water from minus 4,885 feet while Alpha Petroleum Co.'s No. 1 Falvey, in the G. Harris Survey was making from 10 to 15 per cent water from minus 5,021 feet.

### Fort Bend County

Near Needville in Fort Bend County, Gem Oil Co. has staked location for No. 1 Farmer, 330 feet out of the northeast corner of the Robert Hodges Survey. Operators have a block of approximately 3,000 acres surrounding the location. It is reported Stanolind Oil & Gas Co. has taken about $2,500 in leases around the well and Sinclair has taken a $6,000 spread in the area. About 5 miles south of Needville, Wilks and others have completed derrick for No. 1 Norris. In the northeastern part of the county, Vico Oil Co. has completed derrick for No. 1 H. R. Darst, in the E. Powell Survey. It is reported that Perry Cook has recently taken about 11,000 acres in the northern part of the county and south and southwest of Katy, which will probably be turned to some of the largest companies. The area has been worked by both torsion balance and reflection shooting.

### Polk County

In the Ace area, Polk County, Alpha Petroleum Co.'s No. 1-B Kirby & West, in the G. S. Thomas Survey, has been abandoned as dry with total depth of 5,533 feet in hard sandy shale. On a drill stem test from 4,881-99 feet through a quarter-inch choke on bottom and five-sixteenths inch choke on top, in 11 minutes it showed 60 pounds pressure and showed 3 thribbles of clean oil, 4 thribbles of oil slightly cut with salt water and 4 thribbles of salt water. On the second drill stem test from 4,887-99 feet with one-quarter inch choke on bottom and three-eighths inch choke on top in 14 minutes it built up 60 pounds pressure and showed 3 thribbles of oil, 18 thribbles of oil cut with salty water and 2 thribbles of salt water. This gives the area four tests, two dry holes and two gas and distillate wells.

Gem Oil Co. is preparing to kill the old discovery well at Livingston, No. 1 Davis & Holmes, and carry it deeper. The well was completed for estimated 50,000,000 feet of gas in October, 1932.

### Jackson County

In the Vanderbilt area of Jackson County, Encio Gas Co.'s No. 1 Siedel and Simmons, a northeast offset to the discovery, had been plugged back to 5,500 feet and operators were preparing to sidetrack and core the sand again. The well gave the area quite a setback last week when it tested salt water with a total depth of 5,581 feet. It cored 5,541-58 feet with a 2-foot recovery of sandy shale with an odor of oil and had sandy shale from 5,558-81 feet. On a drill stem test from 5,500-81 feet through quarter-inch chokes on top and bottom it showed no pressure and recovered 7 fourbles of salt water with a little oil in the first fourble. The seat slipped on the test but the salt water was enough to show that the well had been carried too deep. Encio's No. 1 Drummond was preparing to set surface casing. It is reported that

(Continued on Page 76)

## Gulf Coast Fields and Wildcats

**Week Ending June 30**

| Company, farm and location— | Remarks: |
|---|---|
| **RACCOON BEND—AUSTIN COUNTY** | |
| Humble O. & R. Co.'s No. 3 Effie Kearns, 270 ft. W of E line, 825 ft. N of S line of 175-ac. lease in W. C. White Sur. | Old T.D. 4,750 ft.; P.B. to 3 432 ft.; cmt. 7-in. csg.; drlg. sand 3,437 ft. |
| Humble O. & R. Co.'s No. 3 McCasland | Drlg. hard chalk 153 ft. |
| Humble O. & R. Co.'s No. 2-B Remmert | T.D. 4,142 ft.; top Cockfield 3,900 ft.; comp. 43 bbls. hr.; ⅝-in. choke. |
| Humble O. & R. Co.'s No. 13 Thompson | Top Cockfield 3,830 ft.; comp. 35 bbls. hr.; ⅝-in. choke; T.D. 4,152 ft. |
| Humble O. & R. Co.'s No. 5-B Wilson | Drlg. shale 148 ft. |
| **DANBURY—BRAZORIA COUNTY** | |
| Shell Pet. Corp.'s No. 6 Blakey & Winston | Drlg. shale 570 ft. |
| Shell Pet. Corp.'s No. 3 Haury, 800 ft. SE of No. 2 in line with No. 2 and No. 1 Blakely-Winston, H.& T.B. Sur. No. 13 | Reaming 2,000 ft. |
| Shell Pet. Corp.'s No. 1 Schmitt | Derrick and moving in material. |
| **DAMON MOUND—BRAZORIA COUNTY** | |
| Esco's No. 1-D Wisdom, 25 ft. from S and W lines of Blk. D, Lot 5, A. Darst Sur. | Skid 15 ft. SE; drlg. 100 ft. |
| Sinclair Prairie Oil Co.'s No. 4 Lucas, A. Darst Sur., 125 ft. N S line, 25 ft. E W line, Blk. 15 | T.D. 1,792 ft.; P.B. to 1,768 ft.; swabbing. |
| H. Wisdom's No. 2 fee, A. Darst Sur., 50 ft. E W line and 200 ft. N of No. 1 | Shale 1,120 ft.; S.D. |
| H. Wisdom's No. 3 fee, A. Darst Sur. | Shale 130 ft.; no report. |
| H. Wisdom's No. 1 Proctor, 40 ft. out of SW cor. Blk. 1, A. Darst Sur. | Drlg. shale 767 ft. |
| **MANVEL—BRAZORIA COUNTY** | |
| Abercrombie & Harrison's No. 1 Llewellyn, center of Lot 15, A.C.H.&B. Sur. No. 91 | T.D. 4,003 ft.; topped sand 3,976 ft.; comp. 25 bbls. hr.; ½-in. choke; tubing pressure 170 lbs. |
| Gulf Prod. Co.'s No. 1 Colby | Drlg. hard shale and lime 4,288 ft. |
| Max O. Milner's No. 1 H. F. Stipp, 220 ft. W of E line and 195 ft. N of S line of Lot 28, H.&T.B. No. 23 Sur. | Location. |
| Texas Co.'s No. 10-B Belcher, 2,658 ft. N, 48 deg. 9 ft. W and 330 ft. N, 41 deg. 51 ft. E of S cor. of lease in H. N. Little Survey | T.D. 5,105 ft.; comp. 562 bbls. day, ¼-in. choke, 2% wash wtr.; tubing pressure 600 lbs.; csg. pressure 700 lbs. |

(Continued on Page 88)


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- **GULF COAST**—Gulf Engineering Co., Houston. Preston 5890. P. O. Box 182. E. F. Goggins.
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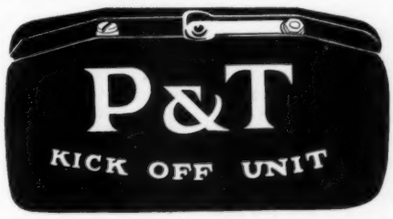


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STROUD, OKLAHOMA

# Pacific Coast's Oil Outlook for Remainder of Year Greatly Improved by Marketing Pact

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., July 2.—Restoration of normal prices for gasoline in Pacific Coast territory on June 26, following a prolonged period of price cutting, greatly improved the outlook for the remainder of the year. The advantages of the marketing agreement, which contemplates the stabilization of prices and close adherence to curtailment work, will be manifested in a tangible form within the next few weeks, as the Pacific Coast Petroleum Agency will soon take over the job of supervising the distribution of crude oil and providing for absorption and distribution of any excess production of gasoline by independent refiners. The agency has already begun to function and the forms to be submitted by refiners and purchasers of crude oil are ready for distribution.

Operation of the new marketing agreement, which became effective July 1, following expiration of the 10-day period allowed by the Federal court for the filing of any objections, will greatly enhance curtailment, as signatories have agreed not to produce, buy or utilize any crude oil in excess of the amount prescribed by the petroleum administrator. With the exception of the chronic chiselers who loaded up when the price was down a short time ago, practically all resellers on the Pacific Coast posted the new scale of prices on June 26.

### Production Down

State production during the current week showed a substantial decline from the output during the preceding seven-day period and from present indications production during the month of July should closely approximate the established allowable of 509,400 bbls. per day. During the early part of the month it is quite likely that production will exceed the daily quota due to the policy of operators to take their allowable early in the month and then either suspend production or undertake remedial work. The high rate of production during the early part of June undoubtedly was due to the fact that producers and refiners were cleaning house before the marketing agreement became effective and prevented further movement of hot oil.

California operators have been balloting this week for the purpose of electing chairmen in the various fields of the state as the tenure of office of the present proration committee terminates June 30. Chairmen of the various districts upon being elected automatically become members of the central committee of California oil producers which is charged with the obligation of advancing curtailment. It is quite likely that several of the present members of the committee will be returned but in several districts the present incumbents will be replaced as a number of operators are displeased with the allocation of production. The new members will soon find out that the committee has been endeavoring to work out a fair allocation and that the problem is not as simple as it might appear on the surface. The central committee consists of 27 members, 9 having been appointed by the petroleum administrator and 18 elected by operators in the various districts.

### Mountain View

Three new wells were finished in the Mountain View Field of Kern County and another, Gilmore Oil Co.'s No. 1 Dechent, should be tanking oil early in July. The Standard Oil Co. finished its first producer in this field early in the week when No. 1 Ranton in Section 24-30-28 was brought in flowing 1,968 bbls. of clean 29.3 gravity oil and 1,500,000 feet of gas per day from 5,465 feet. This well, finished with a 7-inch liner including 220 feet of perforations, was started several weeks after No. 1 Nichols, which has defied efforts to complete it as a commercial producer. Standard has several excellent locations available on the Wible lease and the company will undoubtedly start a new well on this property within the next few weeks.

The Mohawk Petroleum Co. finished No. 1 Mabry, flowing 522 bbls. of 28.7 gravity oil and 600,000 feet of gas per day from 5,686 feet, after completing the job with a 4¾-inch liner carrying 260 feet of perforations. The Mohawk has completed seven producing wells in this field and still has a number of unusually good locations left for future work. All wells of the company are severely pinched back in conformity with curtailment regulations. The Hogan Petroleum Co., headed by Dana Hogan, finished No. 1 Mid-State pumping 141 bbls. of 24.5 gravity oil per day from 5,845 feet. This concern, the first to develop commercial production in the Mountain View Field, has finished four wells as commercial producers in addition to two small pumpers taken over from the Shell. The Shell is starting work on No. 1 Cowan and may yet develop production in this field which it unsuccessfully pioneered a few years ago. No. 1 Cowan is located close to the projected fault defining the field on the north. Allan Brown has taken over E. G. Starr's lease on the Wells property and preparations are under way to drill an offset to the Mohawk's No. 1 Clendennen, finished a month or so ago as an excellent producer.

### Montebello

Operators in the Montebello Field may have a troublesome water problem to solve before deep zone development becomes a reality as two wells in this field failed to make any headway during the past week. The water zone is separated from the producing horizon by a shale body, however, and consequently this problem may be overcome with additional drilling. It is significant to note that both of the two first wells to get down to the deep Cruz zone have been bothered with water. The Texas Co. got a wet job on No. 4 Barry early this week and the well will be recemented for the second time as the first two jobs failed to prove effective. The Universal Consolidated's deep zone discovery, No. 1 Cruz, appears to require further work as considerable trouble has been experienced since the hole was carried down to 7,505 feet and then plugged back to 6,950 feet. This well was originally completed flowing 700 bbls. per day after several cement jobs and was producing clean oil until the company decided to drill ahead in order to find out if there was another zone zelow the Cruz. Just at present the Universal has a water problem on its hands instead of a commercial producer.

### Inglewood

Drilling operations in the Inglewood Field of Los Angeles Basin indicate that this field will become a factor of importance at a later date as the Pacific Western Oil Co. has proved up the existence of a third zone. It is not the intention to produce the newly discovered Rubel zone as the Pacific Western started No. 17 Rubel for the specific purpose of determining the productivity of the Miocene and at the same time explore ahead in order to ascertain the possible ultimate recovery of the field. The Inglewood Field is one of the few fields in Los Angeles Basin that has not been explored ahead as operators have been retarding development until a more propitious time. It is generally believed, however, that this field will be found to have several productive horizons as has been the case with other fields located along the Newport-Beverly sheer zone.

The Standard Oil Co. chalked up a new well in this field during the current week by finishing No. 70 on Los Angeles Investment Lease No. 1 flowing 1,434 bbls. of clean 30.4 gravity oil and 348,000 feet of gas per day from the Rindge zone at 3,075 feet. This new well was finished with a 10¾-inch water string landed at 2,596 feet and an 8⅝-inch liner carrying 479 feet of perforations. This is the second well to be finished by the Standard since development of the Rindge zone was authorized by Secretary Ickes a short time ago. These shallow wells can be completed in about 30 days and consequently do not require any great expenditure. On the Vickers lease, the Standard is building rig for No. 28 which is scheduled to be spudded in early in July. The Shell has No. 16 Rindge in the pay and should complete this new potential producer within the next 15 days.

### Santa Fe Springs

The Santa Fe Springs Field of Los Angeles Basin has taken a new lease on life following the starting of several new wells during the past month and the recent initiation of reconditioning work on a number of old wells. The Union finished No. 5 Farwell doing 133 bbls. of 33.5 gravity oil per day from 4,520 feet. The General Petroleum also put a well on production by drilling a little deeper. No. 22 Santa Fe was deepened from the Bell zone at 3,810 feet to the Meyer zone at 3,705 feet and returned to production pumping 158 bbls. of relatively clean 35.1 gravity oil per day. The East Santa Fe Oil Co. recompleted No. 1 National after plugging back the hole to 4,666 feet from which depth it was returned to production pumping 151 bbls. of 34.8 gravity oil per day. This well may require some further work, however, as the cut is still rather high. The Union is rigging up two new wells in this field for immediate drilling and both should be spudded in within the next 15 days.

### Dominguez

A check of development work under way in he Dominguez Field indicates the probability that several new producers will be finished within the next 30 days and judging by the scope of work under way there is every reason to believe that this field will continue relatively active during the remainder of the current year. The Union and Shell are doing most of the work in this field as these two companies hold approximately 90 per cent of the total amount of productive acreage. The drilling being done by these operators is not of their own choosing as both would like to sit tight for another year or two. Unfortunately lease requirements necessitate immediate development notwithstanding the fact that many of the wells must be shut in upon completion due to the curtailment program. The only effect of this development from a production standpoint is that the companies have continued to build up a reserve for the future. The bottom of the productive formation has not yet been reached at Dominguez although one well has been completed in the upper part of the Miocene. This well indicates the probability that one or more productive

**TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS**

| | June 17 | | June 10 | | | |
|---|---|---|---|---|---|---|
| | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
| Intercoastal-domestic— | | | | | | |
| Fuel oil | 116,656 | 16,665 | 293,402 | 41,915 | 7,305,160 | 805,861 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 931,159 | 1,085,064 |
| Gasoline | ..... | ..... | 242,088 | 34,584 | 3,021,612 | 4,286,512 |
| Kerosene | ..... | ..... | 15,791 | 2,256 | 568,197 | 496,994 |
| Other finished oil | ..... | ..... | ..... | ..... | 15,171 | 42,814 |
| Other unfinished oil | ..... | ..... | ..... | ..... | ..... | 72,584 |
| Foreign exports— | | | | | | |
| Crude oil | 297,098 | 42,443 | 30,100 | 4,300 | 3,671,713 | 3,422,359 |
| Fuel oil | 317,790 | 45,399 | 390,980 | 55,854 | 5,985,176 | 3,523,666 |
| Diesel and gas oil | 34,437 | 4,920 | 144,427 | 20,634 | 1,892,735 | 1,556,233 |
| Gasoline | 50,440 | 7,206 | 166,413 | 23,773 | 1,912,961 | 2,726,257 |
| Kerosene | 82,723 | 11,818 | 115,198 | 16,457 | 972,320 | 822,813 |
| Other finished oil | ..... | ..... | ..... | ..... | 3,529 | ..... |
| Other unfinished oil | ..... | ..... | ..... | ..... | 127,271 | 34,547 |
| Coastwise-domestic— | | | | | | |
| Crude oil | 266,182 | 38,026 | 32,536 | 4,648 | 4,584,133 | 4,328,559 |
| Fuel oil | ..... | ..... | ..... | ..... | 4,373,103 | 4,708,245 |
| Diesel and gas oil | 26,035 | 3,726 | 5,625 | 804 | 385,769 | 682,499 |
| Gasoline | 157,744 | 22,535 | 107,147 | 15,307 | 4,968,886 | 5,718,741 |
| Kerosene | 1,255 | 179 | 5,799 | 828 | 81,472 | 100,697 |
| Naphtha distillates | ..... | ..... | ..... | ..... | ..... | 27,651 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Intercoastal-domestic— | | | | | | |
| Fuel oil | ..... | ..... | ..... | ..... | 110,650 | ..... |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 448,113 | 280,531 |
| Gasoline | ..... | ..... | ..... | ..... | 72,625 | 500,966 |
| Kerosene | 78,914 | 11,273 | ..... | ..... | 276,412 | 482,430 |
| Lubricants | ..... | ..... | ..... | ..... | 18,331 | 16,400 |
| Foreign exports— | | | | | | |
| Crude oil | ..... | ..... | ..... | ..... | 803,155 | 999,943 |
| Fuel oil | 20,850 | 2,983 | 18,362 | 2,623 | 763,650 | 361,366 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 679,164 | 584,713 |
| Gasoline | ..... | ..... | ..... | ..... | 1,574,402 | 2,096,219 |
| Kerosene | ..... | ..... | ..... | ..... | 377,226 | 479,094 |
| Lubricants | ..... | ..... | ..... | ..... | 72,395 | 74,112 |
| Other finished oil | ..... | ..... | ..... | ..... | 2,760 | 3,745 |
| Other unfinished oil | ..... | ..... | ..... | ..... | 5,750 | 19,166 |
| Coastwise-domestic— | | | | | | |
| Fuel oil | ..... | ..... | 106,175 | 15,168 | 1,730,474 | 1,491,420 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 95,371 | 166,162 |
| Gasoline | 114,903 | 16,415 | 43,151 | 6,164 | 1,740,318 | 1,640,231 |
| Kerosene | ..... | ..... | ..... | ..... | 48,112 | 72,619 |

horizons may be anticipated in this field if it runs true to form as the Miocene had three zones at Santa Fe Springs and was similarly productive at Long Beach and should show comparable results at Inglewood.

The Republic Petroleum Co. failed to get commercial production in No. 5 Childs in the Dominguez Field and the hole will probably be abandoned as it showed salt water on a pumping test after it had been plugged back from 4,623 feet to 4,096 feet. The Standard is pursuing a conservative development program in the West Coyote Field of Los Angeles Basin and preparations are being made to begin drilling operations on two new wells in the immediate future. In the Huntington Beach town lot area, the Standard is putting the finishing touches on No. 22 P. E. and is rigging up No. 23 P. E. and No. 69-B for early work. The drilling being done by this company at Huntington Beach lies between the surface locations of wells that were deviated beneath the state tidelands and the high tide line. In the Brea Olinda Field, General Petroleum has abandoned No. 8 Tonner and is rigging up No. 8-A Tonner which will be drilled approximately 150 feet from the Union Oil Co.'s property line on the Stearns lease.

### Lost Hills-Belridge

The General Petroleum is having a lot of trouble with its deep well in the South Belridge Field of Kern County and may be obliged to pull the 4¾-inch liner and scrape the wall of the hole in order to remove the heavy mud which is believed to have baked in and around the liner. The temperature in this deep well is about 300 degrees and it is quite obvious that this is not especially conducive of satisfactory results particularly after the drilling mud has been more or less inactive for a period of 10 days. The unfortunate part of the story is the fact that the company had the makings of a good well and would probably have finished it except for a minor mishap on the surface which delayed the production test and allowed the heavy mud to coagulate. Computations, based on the casing pressure and the hydrostatic pressure, indicated that No. 1 Berry shortly before the delay mentioned showed a rock pressure of approximately 6,000 pounds. The only regret is that the crew did not let it come in when it showed a pressure of about 1,700 pounds and showed every indication of production. Superintendent Dick Shinn is a very competent man, with plenty of American and Mexican experience back of him, and consequently his judgment cannot be questioned. After the heavy mud was reintroduced into the hole to keep it under control, the well did not look the same. The California oil industry is solidly behind the General Petroleum Co. and there is a unanimous hope that this deep well will eventually be brought in as a commercial producer. Officials of the company who have seen the performance of the well on several occasions are still hopeful of production and it would not be at all surprising to find this well coming in with a bang at any time.

The Belridge Oil Co. abandoned two old wells in the Belridge Field this week but should more than make up for this as both of two new wells which the company is now drilling are located in proved territory. The Continental Oil Co. is rigging up No. 5 Result, a new well which is scheduled to get under way within the next few days and the Standard is just about ready to re-enter No. 1 McPhail preparatory to resuming work. The

### IMPORTANT NORTHERN CALIFORNIA WILDCATS

| Company, well location— | S.T.R. | Depth | Status: |
|---|---|---|---|
| General Pet., No. 9 Capitan, Santa Barbara Co. | 32- 5-30 | 2,120 | sd. sh. drilling |
| Shell Oil Co., No. 3 Capitan, Santa Barbara Co. | 32- 5-30 | 614 | sd. sh. drilling |
| Fields, O. C., No. 1 Casmalia, Santa Barbara Co. | 13- 9-35 | 1,260 | cleaning out |
| Fairview Oil Co., No. 1 Purisima, Santa Barbara Co. | 18- 7-34 | 2,763 | bl. sh. drilling |
| Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara | 15- 4-29 | 4,868 | redrilling |
| Signal O. & G. Co., No. 2 Elwood, Santa Barbara Co. | tideland | 5,415 | suspended |
| Signal O. & G. Co.'s No. 3 Elwood, Santa Barbara Co. | tideland | 698 | hd. sh. drilling |
| East Elwood Pet. Co., No. 1 Elwood, Santa Barbara Co. | 14- 4-29 | 2,399 | sidetrack slip |
| Advance Pet. Co., No. 1 Naples, Santa Barbara Co. | 7- 4-29 | 5,134 | resume work |
| Shell Oil Co., No. 1 Goleta, Santa Barbara Co. | 20- 4-28 | rig | rigging up |
| Hastain & Stone, No. 1 Goleta, Santa Barbara Co. | 9- 4-28 | 2,701 | suspended |
| Union, No. 2 Santa Maria, Santa Barbara Co. | 24-10-34 | 1,553 | cemented |
| Richfield, No. 1 Rincon, Ventura Co. | 17- 3-24 | 2,557 | redrilling |
| Woodrow Pet., No. 1 Rincon, Ventura Co. | 4- 3-24 | 7,612 | milling |
| Continental, No. 3 San Miguelito, Ventura Co. | 23- 3-24 | 4,096 | hd. sh. drilling |
| Hancock Oil Co., No. 1 Fillmore, Ventura Co. | 13- 4-19 | 3,357 | suspended |
| Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co. | 1- 4-19 | 1,014 | hd. sh. drilling |
| Piru Oil Co., No. 1 Piru, Ventura Co. | 14- 4-18 | 320 | hd. sh. drilling |
| Williamson & Donaher, No. 1 Simi, Ventura Co. | 36- 3-18 | 1,016 | bail open hole |
| American Drlg. Co., No. 1 Simi, Ventura Co. | 6- 2-17 | 354 | sd. sh. drilling |
| Prop. Service Corp., No. 1 Lloyd, Ventura Co. | 24- 3-23 | 2,164 | sd. sh. drilling |
| Laing & Jacobs, No. 1 Shiells, Ventura Co. | 32- 4-19 | 701 | cleaning out |
| Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co. | 21- 4-22 | 1,954 | cemented |
| Mosher, J. W., No. 1 Santa Paula, Ventura Co. | 22- 4-21 | 2,113 | sd. sh. drilling |
| Las Posas Pet., No. 1 Las Posas, Ventura Co. | 22- 3-20 | 7,070 | sd. sh. drilling |
| International Oil Developers, No. 1 Conejo, Ventura Co. | 33- 2-20 | 3,068 | suspended |
| Shell Oil Co., No. 1 Gould Hills, Kern Co. | 21-29-21 | 4,985 | sd. sh. drilling |
| Standard Oil Co., No. 1 McKittrick, Kern Co | 15-30-22 | 2,930 | prod. test |
| Casa Mira Oil Co., No. 1 Belridge, Kern Co. | 29-28-20 | 4,982 | cleaning out |
| General Pet., No. 1 South Belridge, Kern Co. | 30-28-21 | 11,377 | prod. test |
| Union Oil Co., No. 18 North Belridge, Kern Co. | 36-27-20 | 7,824 | cemented |
| Standard, No. 1 North Belridge, Kern Co. | 36-27-20 | 4,528 | rigging up |
| Associated, No. 1 Lost Hills, Kern Co. | 2-26-20 | 7,858 | suspended |
| Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co. | 31-31-26 | 7,957 | resume work |
| Caravel Pet., No. 1 Edison, Kern Co. | 19-30-30 | 1,960 | tested wet |
| Alta Oil Co., No. 1 Union Avenue, Kern Co. | 6-30-28 | 6,457 | plug 4,040 ft. |
| Mountain View Dev. Co., No. 1 Mountain View, Kern Co. | 12-30-28 | 3,976 | sd. sh. drilling |
| Gilmore Oil Co., No. 1 Mountain View, Kern Co. | 24-30-28 | 5,404 | O.S. drilling |
| Union Oil Co., No. 2 Mountain View, Kern Co. | 23-30-28 | 4,990 | sd. sh. drilling |
| Union Oil Co., No. 3 Mountain View, Kern Co. | 15-30-28 | 1,072 | sd. sh. drilling |
| General Pet., No. 1 Mountain View, Kern Co. | 14-30-28 | rig | rigging up |
| Barnsdall, No. 2 Mountain View, Kern Co. | 32-30-29 | .... | location |
| Hogan Pet. Co., No. 4 Mountain View, Kern Co. | 29-30-29 | 5,845 | pump 125 b/d |
| Standard, No. 1 Mountain View, Kern Co. | 19-30-29 | 5,843 | plug 5,557 ft. |
| Hoyt, Otis, No. 1 Mountain View, Kern Co. | 19-30-29 | 1,022 | sd. sh. drilling |
| Shell, No. 1 Mountain View, Kern Co. | 30-30-29 | mtl. | bldg. rig |
| Monterey Exploration, No. 2 Edison, Kern Co. | 22-30-29 | 478 | sd. drilling |
| York-Smullin Drlg. Co., No. 1 Edison, Kern Co. | 10-30-28 | .... | location |
| Jergins Trust, No. 1 Edison, Kern Co. | 22-30-29 | 739 | sd. sh. drilling |
| Shell, No. 1 Edison, Kern Co. | 16-30-29 | .... | grading |
| Commanche Oil Co., No. 1 Commanche, Kern Co. | 15-32-29 | 3,590 | sd. sh. drilling |
| Tejon Ridge Oil Co., No. 1 Commanche, Kern Co. | 23-32-29 | 982 | sd. drilling |
| Badger Oil Co., No. 1 Wheeler Ridge, Kern Co. | 31-11-19 | 6,000 | suspended |
| Russ Oil Synd., No. 1 Kingsburg, Fresno Co. | 28-12-11 | 4,004 | suspended |
| Bergman, Harry, No. 1 Kingsburg, Fresno Co. | 12-12-11 | 6,138 | milling on fish |
| Western Gulf, No. 1 S.P., Fresno Co. | 15-17-15 | 5,868 | prod. test |
| Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co. | 24-21-16 | 10,944 | redrill 10,240 |
| Texas Co., No. 1 Alcade, Fresno Co. | 1-21-14 | rig | rigging up |
| Mustang Oil Co., No. 1 Alcade, Fresno Co. | 8-21-13 | 180 | sd. drilling |
| Farrel Pet., well No. 1, San Luis Obispo Co. | 18-31-12 | 1,760 | sd. sh. drilling |
| Willett Oil Co., No. 2 Cholame, San Luis Obispo Co. | 10-25-15 | 920 | sd. sh. drilling |
| Commonwealth Consd. Gas Co., No. 1 Tulare Lake, Kings | 21-22-20 | 1,580 | redrilling |
| Armadillo Oil Co., No. 1 Tulare Lake, Kings Co. | 32-22-20 | 1,760 | cemented |
| Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co. | 2-23-19 | 1,192 | suspended |
| Tulare Basin Oil Co., No. 2 Tulare Lake, Kings Co. | 2-23-19 | 1,200 | suspended |
| Kettleman Pac. Oil Co., No. 1 Tulare Lake, Kings Co. | 11-23-16 | 900 | sd. sh. drilling |
| Weller, Carl, No. 1 Tulare Lake, Kings Co. | 11-23-16 | 871 | sd. sh. drilling |
| Trico O. & G. Co., No. 1 Atwell Kings Co. | 33-24-22 | 102 | sd. drilling |
| Douglas J. M., well No. 1, Monterey Co. | 36-22- 9 | 3,942 | br. sh. drilling |
| Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co. | 5- 2-10 | 4,760 | suspended |
| Pacific Northern Oil Co., No. 1 Guinda, Yolo Co. | 23-12- 3 | 6,760 | suspended |
| Buttes Oilfields Co., No. 1 Marysville, Sutter Co. | 35-16- 1 | 2,731 | gas—shut in |
| Buttes Oilfields Co., No. 2 Marysville, Sutter Co. | 35-16- 1 | 4,350 | andesite, drlg. |
| Milham Exploration Co., No. 1 Tracy, San Joaquin Co. | 5- 4- 5 | 5,265 | hd. sh. drilling |
| Tehama Pet., No. 1 Murdock, Glenn Co. | 10-22- 5 | 620 | suspended |
| Pure Oil Co., No. 1 Chowchilla, Madera Co. | 7-10-14 | 4,100 | sd. sh. drilling |


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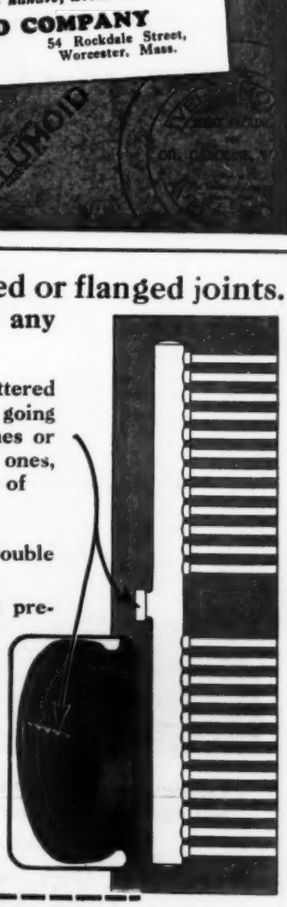

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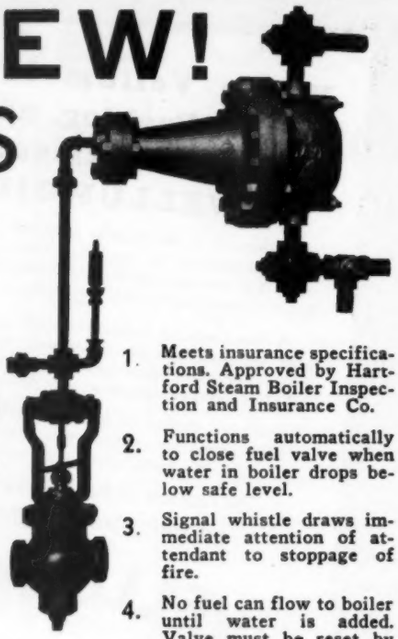

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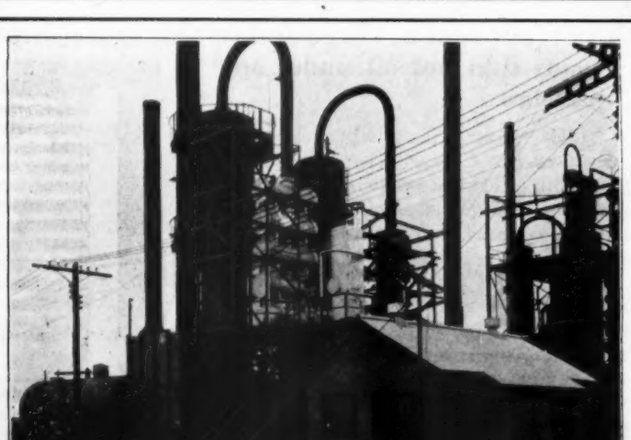

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Standard abandoned No. 1 McPhail about two years ago but retained the lease and now stands an excellent chance of getting commercial production in an area that at one time looked rather unfavorable. The Ohio Oil Co. has killed its gas well in the Buena Vista Lake area and will attempt to produce from some upper showings which were logged during the course of work. This well came in as a gasser about two weeks ago flowing approximately 10,000,000 feet of gas testing 98 per cent methane.

### Mount Poso

The Mount Poso Field of Kern County, which has shown more than a normal amount of drilling during the past several months, is expected to continue relatively active during the remainder of the current year as a sufficient number of locations have been staked to practically guarantee a continuance of work. The Union is putting in foundations for four new wells and has staked location for another on the S. & M. property in Section 4-27-28. The Shell is building rigs for two new wells and both should begin making hole within the next 15 days. The Shell has not pursued as aggressive drilling program as the company's holdings justify but may be holding back drilling for a specific purpose. The Shell has several hundred acres of undeveloped property in this field which will be used to advantage in the future due to the consistent improvement in fuel oil prices. The Shell has been buying substantial quantities of fuel oil in southern California instead of utilizing its heavy oil production at Mount Poso.

Texas Co. finished a new well in this field during the early part of the current week but this new producer has not yet cleaned up. It should show favorable production within the next few days, however, as the cut is all sand. This is a characteristic of wells in this area but is soon overcome after wells have a chance to clean themselves out. Texas Co.'s new completion was No. 6 Vedder, which was brought in pumping 290 bbls. of 15.8 gravity oil per day from 1,652 feet. In the McKittrick Field the Standard has resumed work on No. 45 in Section 15-30-22 and will land another string of casing preparatory to making a conclusive production test. The Welport Oil Co. is cleaning out a sand bridge in its well in this field and should be in a position to make a production test in the immediate future. The Western Gulf got a wet job on its wildcat in Fresno County and will be obliged to undertake remedial work before proceeding with another production test.

### Ventura Avenue

Associated Oil Co. recently spudded in No. 135 Lloyd in the Ventura Avenue and while this is a rather common o currence in this district the starting this well is of more than passing imp tance as it is destined to be carried in the deep 57 zone discovered by the co pany about two years ago. The signifi cance that attaches to the well lies in t fact that it is located very favorably wi respect to structure and should conse quently prove a very interesting projec During the early part of the week th Associated recompleted No. 7 Lloyd d ing 218 bbls. of 27.1 gravity oil per da from 5,371 feet. The General Petroleu is making rather slow progress in No. 1 Notten, a projected deep test which scheduled for completion in the 57 zon but this policy is premeditated as th company is exercising extreme care i order to minimize mechanical trouble The Shell should finish a new well i the deep 57 zone within the next 30 day as its No. 77 Taylor is rotating at 9,00 feet in shale streaked with good showing of oil sand.

The Barnsdall and Rio Grande, which are jointly developing several leases i the Elwood Field of Santa Barbara County should finish a new well on tide land permit No. 88 within the next few weeks unless, of course, this project i carried down into the Sespe instead being finished in the Vaqueros. The wel is at present standing cemented at 3,18 feet. The Continental Oil Co. is making splendid progress with No. 3 Grubb, new well in the San Miguelito Field o Ventura County, although it will be an other 60 days before this project reaches the pay.

### PACIFIC GAS REVENUE

LOS ANGELES, Calif., July 2.—A reopening of special master hearing o injunction action of Pacific Gas & Elec tric against California Railroad Com mission gas rate reduction order of No vember, 1933, the company entered ex hibits showing gross gas revenue, in cluding $417,794 miscellaneous income o the gas department, amounting to $21, 661,677 for the 12 months ended May 31, 1934. Hearing is proceeding on the original record and affidavits, as file prior to interruption of case by ineffec tive compromise effort.

### NEW INCORPORATION

EDMONTON, Alberta, July 2.—Do minion Gas Service, Ltd., has been reg istered under the Alberta Companies Act with office for Alberta at Calgary and Dennis K. Yorath as attorney. The au thorized capital is 1,000 no par shares and paid up capital $500. The company is undestood to be affiliated with Cana dian Western Natural Gas Co. of Cal gary and Northwestern Utilities, Ltd., of Edmonton.

### IMPORTANT SOUTHERN CALIFORNIA WILDCATS

| Company, well location— | S.T.R. | Depth | Status: |
|---|---|---|---|
| Vanco Dev. Co., No. 1 Artesia, Los Angeles Co. | 25- 3-12 | rig | suspended |
| Woodward Oil Co., No. 1 Athens, Los Angeles Co. | 12- 3-14 | 1,078 | sd. sh. drilling |
| Clark & Miller, No. 1 Hermosa, Los Angeles Co. | 31- 3-14 | rig | suspended |
| Domingues Oil Co., No. 1 Dominguez, Los Angeles Co. | 34- 3-13 | 4,770 | suspended |
| Quinn, J. B., No. 1 Dominguez, Los Angeles Co. | 3- 4-13 | 4,587 | redrilling |
| Nudson, T. T., No. 1 Inglewood, Los Angeles Co. | 17- 2-14 | 3,020 | plug 2,575 ft. |
| Baldwin Oil Co., No. 1 Inglewood, Los Angeles Co. | 7- 2-14 | 6,2 00 | open hole test |
| Scientia Oil Co., No. 1 Inglewood, Los Angeles Co. | 7- 2-14 | 2,257 | test WSO |
| Pacific Western, No. 1 Inglewood Deep, Los Angeles Co. | 8- 2-14 | 3,680 | O. S. drilling |
| Plymouth Oil Co., No. 1 Inglewood, Los Angeles Co. | 8- 2-14 | 4,165 | sd. sh. drilling |
| Wilshire, No. 2 Potrero Deep, Los Angeles Co. | 27- 2-14 | 7,418 | redrilling |
| Community Oil Co., No. 1 Montebello, Los Angeles Co. | 34- 1-11 | 7,447 | suspended |
| Universal Consd., No. 1 Montebello Deep, Los Angeles Co. | 5- 2-11 | 7,505 | plug 6,950 |
| Universal Consd., No. 2 Montebello Deep, Los Angeles Co. | 5- 2-11 | 6,950 | suspended |
| Universal Consd., No. 3 Montebello Deep, Los Angeles Co. | 5- 2-11 | 7,680 | suspended |
| Texas Co.'s No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 6,943 | recemented |
| Standard Oil Co., No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 5,171 | hd. sd. drilling |
| St. Helens, No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 4,330 | sd. sh. drilling |
| Fullerton Oil Co., No. 1 Montebello Deep, Los Angeles Co. | 6- 2-11 | 3,016 | hd. sh. drilling |
| Frontier Oil Co., No. 1 Pico, Los Angeles Co. | 7- 2-11 | 1,500 | suspended |
| Midfield Oil Co., No. 1 Pico, Los Angeles Co. | 19- 2-11 | 4,897 | suspended |
| Pressel & Tull, No. 1 Puente Hills, Los Angeles Co. | 30- 2- 9 | 3,064 | rigging up |
| Barstow Oil Co., No. 1 Saugus, Los Angeles Co. | 35- 5-16 | 2,136 | suspended |
| Barstow Oil Co., No. 2 Saugus, Los Angeles Co. | 35- 5-16 | rig | suspended |
| International Dev. Co., No. 1 Saugus, Los Angeles Co. | 34- 5-16 | 2,000 | sd. sh. drilling |
| B. & L. Drlg. Co., No. 1 Newhall, Los Angeles Co. | 14- 3-16 | rig | suspended |
| Black Eagle Oil Co., No. 1 Huntington, Orange Co. | tidelanc | 3,985 | redrilling |
| Nuoli Co., No. 1 Newport, Orange Co. | 29- 6-10 | 6,455 | swabbing |
| Platt & Collins, No. 1 Costa Mesa, Orange Co. | 14- 6-10 | rig | rigging up |
| Explorers Oil Co., No. 1 Fairview, Orange Co. | 9- 6-10 | 904 | suspended |
| Speik Oil Co., No. 1 Fairview, Orange Co. | 9- 6-10 | 1,102 | suspended |
| Placentia Dev. Co., No. 1 Placentia, Orange Co. | 21- 3- 9 | 4,531 | suspended |
| Mid-Rich Drlg. Co., No. 1 Atwood, Orange Co. | 26- 3- 9 | 1,594 | sd. sh. drilling |
| Union Oil Co., No. 1 Coyote, Orange Co. | 22- 3-10 | 3,496 | sd. sh. drilling |
| Bardeen Pet., No. 1 Coyote, Orange Co. | 15- 3-10 | 5,293 | pump 70 b/d |
| Bridger, J., No. 1 Coyote, Orange Co. | 15- 3-10 | 3,703 | cleaning out |
| Severn Drlg. Co., No. 3 Coyote, Orange Co. | 24- 3-11 | 1,684 | sd sh. drilling |
| Great American Pet., No. 1 Chino, San Bernardino Co. | 18- 2- 8 | 2,642 | suspended |
| Great American Pet., No. 2 Chino, San Bernardino Co. | 18- 2- 8 | 3,100 | fishing d/p |
| Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino | 33- 2- 8 | 1,385 | sd. sh. drilling |
| San Diego Pet. Co., No. 1 Chula Vista, San Diego Co. | 32-18- 2 | 3,975 | sd. sh. drilling |

# Eleven Michigan Wells Make 28,872 Barrels, Establishing New State Completion Record

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., July 2.—All previous records in Michigan were broken last week with the completion of 11 oil wells with an aggregate initial production of 28,872 bbls. a day, five more in the pay virtually certain to make commercial producers, one comparatively small gasser, another in which a flow of 3,200,000 feet of gas was encountered on the way to deeper oil sands, two dry and abandoned projects and two dry in upper pay sands to be drilled deeper.

Virtually all of the new oil production was found in Porter Township, Midland County, where seven new wells rated an aggregate potential of 28,522 bbls. a day. Included was Davis Oil Co.'s No. 6 Herman Neitzke, SW NE NW Section 21-13n-1w, which flowed more than 600 bbls. during the third-hour test by State Umpire O. H. White, who declared it "the biggest and best well in Michigan." There is no water encroachment on this lease. It was rated at 14,497 bbls. a day from the Dundee formation. It topped the Dundee limestone at 3,364 feet, hit the pay at 3,385 feet and was completed at 3,412 feet. It flowed 460 bbls. in the first hour and increased to more than 600 bbls. during the third hour.

With new completions for the first three weeks in June averaging an aggregate initial flow of about 9,000 bbls. a day the final week's total of nearly 29,000 bbls. set a new monthly record and boosted the state potential over 150,000 bbls.

Pure Oil Co. brought in the second largest producer with a flow of more than 300 bbls. an hour, estimated initial 7,500 bbls. a day. It was No. 3 Bond-Risley, SW NE NE Section 20, Porter Township, completed at 3,420 feet. Pure's No. 4 F. E. Rosa, NE SW NW Section 21, Porter, flowed 136 bbls. in half an hour, estimated 3,500 bbls. at 3,428 feet. Another Pure well, No. 9 Walter Neitzke, SE NW SE Section 21, was given a rating of 1,476 bbls. at 3,430 feet. Two other wells, Pure's No. 12 Walter Neitzke, SW NW SE Section 21, and Carter Lease, Inc.'s No. 3 William Carter, NE SW SE Sectioon 18, were estimated good for at least 550 bbls. each in the Dundee. The Carter well topped the formation at 3,375 feet and struck pay at 3,394 feet flowing 500 bbls. in 12 hours and still drilling. Pure's No. 12 Neitzke made 420 bbls. in 16½ hours at 3,413 feet. Charles W. Teater and William R. Kales' No. 1 Frank Neitzke, NW NW NW Section 28, Porter, drilled into the Dundee the week before, made 449 bbls. after acid treatment at 3,432 feet.

Stork Oil Co.'s No. 4 Jesse B. Richmond, NW NW SW Section 22, topped the Dundee at 3,379 feet and had a good show of oil and gas at a total depth of 3,428 feet to be treated.

J. Mark Harvey, trustee's No. 3 Farmers State Bank, SW SW SE Section 8, struck the Dundee at 3,382 feet, pay at 3,400 feet and suspended operations at 3,410 feet with oil in the hole. George G. Hanners' No. 4 G. R. Hathaway, NW SW NE Section 17, struck the Dundee at 3,380 feet and cased at 3,383 feet ready to drill in.

### Other Midland County Fields

Three completions, including two small oil wells and a dry hole, were reported in three other townships of Midland County. Mon-Mar Oil Corp.'s No. 1 Emmett Scott, SE SW NE Section 8-14n-2w, Greendale Township, is making about 150 bbls. from the upper Traverse although started as a Dundee well.

Pure Oil Co.'s No. 1-B Iva E. Bond, SE SE SE Section 12-13n-2w, Jasper Township, swabbed 40 bbls. after being plugged back from 3,450 to 3,445½ feet. It is a north offset to Gordon Oil Co.'s No. 1 Greene, a 60-bbl. pumper.

John F. Melvin and Elmer E. Brehm's No. 1 Benjamin F. James and Fred E. Whitaker, NW SW SE Section 19-15n-2w, Geneva Township, had a slight show of gas 28 feet in but no oil or water 82 feet in the Dundee.

McClanahan Oil Co.'s No. 1 David W. Frackleton, SE SE SE Section 18-18n-5w, Lincoln Township, Clare County, struck no gas in the Michigan series and will be carried to the Dundee with standard rig. It was drilled to the gas sand with a rotary.

### Isabella County

Mellon-Pollock Oil Co.'s No. 4 Lewis Thayer and others, SW SW SE Section 22-16n-4w, Vernon, made 60 bbls. a day striking the Dundee at 3,763 feet and completing at 3,772 feet. Same company's No. 3 Joseph Crowley and others, NW NW NE Section 27, had a good show of gas and oil in the hole topping Dundee at 3,762 feet and suspending operations at 3,774 feet. Chartiers Oil Co. will abandon its No. 1 Willey, NE SE SW Section 29, Vernon, dry through the Michigan gas series to a depth of 1,700 feet.

Michigan Cities Natural Gas Co., formerly Isabella Oil Development Co., completed a small gas well in No. 1 Viola Wolfe, NW SE Section 2-14n-6w, Broomfield Township, at 1,337 feet. It had a gauged flow of 829,400 feet from the Michigan sands.

### Montcalm County

Daily Crude Oil Co.'s No. 3 H. P. Christensen heirs, SW SW SE Section 3-12n-6w, Home Township, Montcalm County, ran into an unexpected flow of 3,200,000 feet of gas at 1,315 feet, the Michigan series, but will be carried to the upper Traverse as an offset to two 1,200-bbl. Traverse wells on the same lease including the discovery and second producer in the prospective Montcalm County oil pool.

Pure Oil Co.'s No. 1 H. J. Hansen, NE NE NW Section 10, Home Township, was dry in the upper Traverse. Although the structure was about the same as the two producers limestone was too tight to produce. It is a west offset to the Daily producers.

### Oceana County

John B. Northcott's No. 1 Jane Pinder, SW SW Section 31-15n-16w, Elbridge Township, Oceana County, struck oil and gas at 1,870 feet several weeks ago but was completed only last week after a long fishing job followed by treatment. It was reported to have flowed 100 bbls. in 50 minutes but is estimated good for about 100 bbls. a day. H. C. Nelson struck 8 feet of pay sands in the upper Traverse in his No. 1 Joseph and Anna Christman, W half E half SW Section 25-15n-17w, Hart Township, about a mile northwest of the proved field. It will be treated with prospects of commercial production from 1,880-88 feet.

### Muskegon

Muskegon Development Co. has landed drive pipe in its new wildcat on the Mary Halter lease, SW SW SW Section 22-9n-16w, Fruitport Township, Muskegon County, at 254 feet and is drilling. A. S. Cochran, independent operator in several western Michigan fields, is moving in for his No. 3 Frank J. Durham, S half SW Section 15-10n-16w, Muskegon Township, on the Jackson Avenue road. The new well is an offset to Joseph Murlins' recently successful Ross well.

### New Locations

Permits for eight new locations were issued. Four new Porter locations include: Strange Oil & Gas Co.'s No. 7 Sam Walley, NW SE SE Section 16-13n-1w; George G. Hanners' No. 2 Methodist Church, SE NW Section 17; McClanahan Oil Co.'s No. 3 Norman and Cecile Breu, NW SE NE Section 20, and Davis Oil Co.'s No. 8 Herman Neitzke, NW NW NW Section 21. Two Muskegon wells were A. S. Cochran's No. 3 Frank J. Durham, S half SW Section 15-10n-16w, Muskegon Township, an offset to several small upper Traverse producers, and Muskegon Oil Corp.'s No. 1 Mary Halter, SW SW SW Section 22-9n-16w, Fruitport Township, about 10 miles south of the original Muskegon Field.

Fred W. Stork has taken out a permit for No. 1 Hemlock Poultry Farm, SW SW NE Section 33-12n-2e, Richland Township, Saginaw County, while Mammoth Petroleum Corp.'s former No. 2 Joseph Verette permit has been canceled for No. 1 Lucy G. Thomas, NW cor. SW SE Section 11-12n-6w, Home Township, Montcalm County.

Sun Oil Co. is reported preparing to start a new test in Evart Township, Osceola County, where a good show was struck in a previous Sun wildcat.

Michigan percentage of proration will remain the same for July with a minimum of 100 bbls. a well and 5 per cent above that despite large increases in potential and a comparatively small increase of 400 bbls. a day from 32,800 to 33,200 bbls. a day Federal allowable effective July 1, it was announced by the Michigan proration committee.

# Completions Increase in Central West; Nine Were in the Central Ohio Field

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, July 2.—The Central West district, including the Lima Field, Central Ohio, Indiana, Illinois, Kentucky and Michigan, shows a nice increase. In the Lima Field, in Marion Township, Hancock County, No. 1 P. D. Schinebert farm, operated by P. D. Snonely and others, produced an initial of 70 bbls. No. 2 is drilling on the same farm, in Section 5. Willard, George and others found a dry hole on the George Jones farm, Section 4, Blanchard Township. In Allen County C. A. and F. J. Peavey's test on the C. E. Baldwin farm, Section 13, Bath Township, produced 10 bbls. initial. H. F. Kelley and others have a rig on the F. B. Sellers farm, Section 30, Perry Township.

In Shelby County Arcanum Oil & Gas Co.'s test on the John Moyer farm, Section 29, Cynthian Township, is a dry hole. In Mercer County, Petroleum Producing Corp. is drilling No. 2 C. S. and Vesta E. Lemunyen farm, Section 35, Butler Township. In Van Wert County, Jackson Township, Jackson Oil Co. is drilling No. 1 William F. Pangle farm, Section 29. In Marion Township, Allen County, W. R. Moyers Brothers are drilling on the Laura and Ivor Watkins farm, Section 35. In Jackson Township, same county, Ira B. Post No. 2 and others abandoned No. 5 A. J. Plaugher farm, Section 6.

In Sandusky County, C. E. Waggoner's No. 1 C. E. Waggoner farm, is a gas well. Anna Carr drilled a test on the Anna Shaul farm, Section 10, Hopewell Township, Seneca County, which produced an initial of 1 bbl. Tiffin Oil & Gas Co. is drilling on the Frank Sherger farm, Section 32, Liberty Township, same county. Kenton Oil & Gas Co. is drilling on the John McMahon farm, Section 17, Pleasants Township, Hardin County. Cottonwood Oil Co. is drilling No. 2 C. L. and S. A. Sinift farm, Section 11, Marion Township, same county. Wyanco Oil & Gas Co. staked a location on the David Fernbaugh farm, Section 2, same township.

In Wood County, Carl H. Schwyn abandoned No. 22 S. L. Mitchell farm, Plain Township. In Bloom Township, Ohio Oil Co. abandoned No. 10 E. H. Monasmith farm, Section 29, and No. 39 on the J. H. Monasmith farm, same section.

### CENTRAL OHIO

Nine completions were reported in the Central Ohio Field, of which five are oil wells with an initial of 91 bbls., one dry hole and two gas wells. In Ashland Couty, Robison and others' test on the A. J. McClure farm, Section 10, Lake Township, is a gas well at 528 feet. Several locations have been staked for gas wells in Ashland County.

In Medina County, Preston Oil Co.'s No. 2-1,549 C. A. Dauge farm, produced an initial of 12 bbls. at a total depth of 289 feet. It is in Section 1, Leitchfield Township. Ohio Fuel Gas Co.'s No. 1-5,803 on the Arthur Carpenter farm, Lot 85, Eaton Township, was a dry hole. Same company is drilling No. 1 Helen S. Osborn farm, Lot 49, same township. Wiser Oil Co. is drilling No. 1 Ed Squires farm, Section 12, Carlisle Township, and Ohio Fuel Gas Co. is drilling No. 1-5,843 J. T. Moon farm, Section 22.

In Licking County, Emerald Petroleum Co.'s test on the Sarah Little farm, Section 1, produced an initial of 25 bbls. Preston Oil Co.'s No. 2-1,440 on the Frank Beckford farm, Section 18, Fallsburg Township, same county, also produced 25 bbls. initial. Blue Rock Oil Co. is drilling No. 4 Rachael Freece farm, Section 14, same township. In Franklin Township, Charles Vaughn is drilling No. 1 Mary Wilkin farm, Section 5, Franklin Township. In Perry Township, Whitehill Oil Co. is drilling No. 20 on the Alice Ashcraft farm, Section 29, Perry Township.

In Muskingum County, Pure Oil Co.'s No. 7 W. B. and F. Hoover heirs farm, Section 6, Jackson Township, produced 34 bbls. initial. In Tuscarawas County, Hopewell Oil & Gas Co.'s No. 5 Stewart

(Continued on Page 88)

MacClatchie-GRAMS
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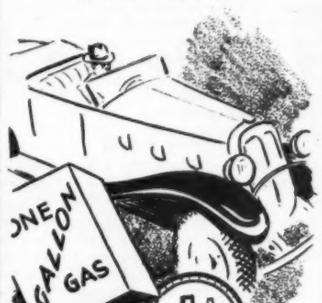
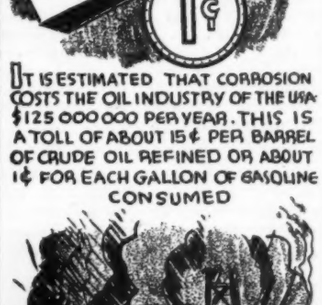



IT IS ESTIMATED THAT CORROSION COSTS THE OIL INDUSTRY OF THE USA $125 000 000 PER YEAR. THIS IS A TOLL OF ABOUT 15¢ PER BARREL OF CRUDE OIL REFINED OR ABOUT 1¢ FOR EACH GALLON OF GASOLINE CONSUMED



THE PLOESTI (ROUMANIA) FIELD WAS COMPLETELY DESTROYED BY BRITISH INTERESTS PRIOR TO THE GERMAN OCCUPATION - EVERY DERRICK, REFINERY AND STORAGE TANK WAS SET ABLAZE - MAKING THE BIGGEST OIL FIRE IN HISTORY!

THE MACCLATCHIE CEMENTING COMBINATION - INCLUDING THE QUICK CHANGE HEAD STOP COCKS AND QUICK UNIONS, IS POPULAR IN FOREIGN FIELDS IT IS THE SPEEDIEST AND MOST CONVENIENT UNIT FOR CEMENTING & RUNNING IN CASINGS.

**MacClatchie Manufacturing Co.**
**Compton, California**

## Gulf Coast Fields

(Continued from Page 71)

Phillips Petroleum Co. has purchased the Encio company's holdings at Vanderbilt, including the two wells. Consideration is reported to have been $350,000 in cash and $350,000 to be paid out of oil.

Heard-Holland Oil Co.'s No. 1 Peck in the Bonnie View area, was preparing to run 7⅝-inch casing and will probably cement at 5,320 feet. It will be completed as a gas well and it is the opinion of some the well will make some oil. Total depth is 5,351 feet. It is reported that Holland Oil Co. has an early drilling obligation on the Hunsdon land, about 1½ miles northeast of the Peck well and just south of the Mission River. It is also reported a well will be drilled on the Jureca tract to the northwest of the Peck well. The Peck well is the first of several deep tests drilled in the general Bonnie View area to show possibilities in the lower horizons. Bunte's No. 2 Rook, about 2 miles southwest of Woodsboro, has been abandoned with total depth of 6,004 feet. Bunte's No. 3 Rooke was abandoned at 6,071 feet.

### Calhoun County

In Calhoun County, Herman Heep Oil Co.'s No. 2 F. Welder was drilling at 5,282 feet. It had salt water sand from 4,770-86 feet and on a drill stem test from 4,770-86 feet open 10 minutes through one-eighth inch chokes on top and bottom showed 10 fourbles of salt water with a show of gas. Continental Oil Co.'s No. 1 Moody, in the southern part of the county and between Seadrift and O'Connor, was drilling at 4,201 feet in shale.

### Victoria County

North of the Keeran Field in Victoria County, C. & R. G. Drilling Co.'s No. 1 R. C. Roos, in the M. A. Castanon Survey, has been abandoned as dry with total depth of 6,030 feet. At Coletto Creek, Petrol Corp.'s No. 1 John Machalic bottomed hole at 2,875 feet and set screen at 2,833-41 feet and has been completed for 125 bbls. daily, jetting.

In the southwestern part of Victoria County, Devonian Oil Co. is reported making preparations for a 6,000-foot test on the heirs of J. N. Fagan 1,900-acre tract in the Peter Teal Survey. California Co. is reported to have given 3,000 acres toward the drilling of the test and Stanolind Oil & Gas Co. is reported to have taken over 500 acres protection around the proposed test.

### Wharton County

At Louise in Wharton County, Pure Oil Co. has spudded No. 2 Charles T. Kountze, about a mile southeast of nearest production in the Louise Field. The well is 2,310 feet at right angles from the northwest line and 990 feet at right angles from the southwest line of 280-acre tract in the Morris & Cummings Survey No. 19. Pure Oil Co.'s No. 2 Wallace Houston, in the T. W. Heard Survey No. 28, Abstract 509, is waiting on cement to set at 5,144 feet. On a drill stem test with tools set at 5,094 feet the well started flowing in 22 minutes and was allowed to flow 35 minutes with three-eighths inch choke on bottom and quarter-inch choke on top. The oil tested 24.9 gravity. Pure's No. 2 Stewart in Section 25, of the Morris & Cummings Survey, was washing down with total depth of 8,218 feet.

### Austin County

In southern Austin County and east of Wallis. Whitehead and Rush are reported to have purchased around 200 acres in the Jacob Stevens Survey. The area has been worked extensively by geophysical instruments. About 8 miles west and little south of Bellville, J. S. Wheelis and associates are reported to have purchased around 550 acres in the southeast part of the W. Allen Survey.

### SOUTH LOUISIANA

In the recently discovered Bosco Field in the easternmost limits of Acadia Parish, Superior Oil Co.'s No. 1 U. T. Iseringhauser was running casing with total depth of 7,850 feet. Superior's No. 1 Elize Mire was coring hard sandy shale at 7,600 feet. No. 1 Richard was drilling shale and sand streaks at 7,145 feet. No. 1 Arceneaux and others was below 6,648 feet in sand and shale. No. 1 Savoie was drilling shale at 5,827 feet. Standard of Kansas' No. 1 Mouton was drilling at 1,260 feet.

About 12 miles to the northwest of Bosco, Edwards Drilling Co.'s No. 1 Daigle was coring at 4,750 feet.

At Roanoke in Jefferson Davis Parish, Humble Oil & Refining Co.'s No. 3 Devilbiss, about three-quarters of a mile southwest of Shell's producer, was drilling at 2,300 feet in shale. Humble's No. 1 Kratzer, about a half mile southwest of the discovery, was rigging up and preparing to spud. Shell's No. 1 Jernigan, an east offset to the producer, was preparing to drill plugs. The 13-inch casing was cemented at 3,518 feet. Shell's No. 1 Joseph Kratzer, discovery well, is still making around 1,050 bbls. daily and it is reported that about 29,000 bbls. has already been shipped by rail from the loading rack at Roanoke. It is reported the Shell Pipe Line Co. will construct a pipe line from the Iowa Field to Kaough's landing south of Lake Charles when enough production is secured in the new oil field to warrant the project. The line would be about 20 miles in length and would give the Shell Pipe Line Corp. 42 miles of line in this section, serving the Roanoke and Iowa Fields.

### Conroe Trend

Along the Conroe Trend in Beauregard Parish, Federal Petroleum Co.'s No. 1 Lutcher-Moore, about 10 miles east of De Quincy and in Section 4-6s-12w, was drilling at 6,742 feet in shale. This test is very important and is being watched with much interest. Operators have completed derrick for its No. 1-B Lutcher-Moore, about 6 miles northwest of No. 1. About 6 miles south of Merryville, Martin-Richardson's No. 1 J. E. Cochran in Section 34-4s-12w was drilling at 6,008 feet.

At Starks in Calcasieu Parish, Union Sulphur Co.'s No. 5 Industrial Lumber Co. has been abandoned in anhydrite at 5,493 feet. Northwest of production on the Sulphur Dome, Union Sulphur Co.'s No. 1 Bernard Ulrich was abandoned with total depth of 5,712 feet.

In the northern part of Calcasieu Parish and south of Heckner and east of the Calcasieu River, W. B. Conover and associates are reported to have recently taken 630 acres. A few miles south of De Quincy, Humble Oil & Refining Co. leased 240 acres from Dennis Moore and D. E. Moore. In the Lunita section east of Starks, Gulf Refining Co. leased 80 acres of the E. J. Fairchild land for a reported price of $3 per acre.

### Hackberry Field

In the northeast extension area of the Hackberry Field, Cameron Parish, Gulf Refining Co.'s No. 14-A Irwin showed good on a drill stem test for opening a new producing sand for the area. The well bottomed hole at 6,853 feet in 13 feet of oil sand and on a drill stem test in five minutes it built up 50 pounds pressure and recovered 12 thribbles of clean oil. At last report it was running 7-inch casing. If productive this will open the fifth producing sand for the area. Texas Co.'s No. 10-B State, the most northerly well in the east flank area of the field, has been completed for 800 bbls. daily with total depth of 7,459 feet. It had sand at 7,441-59 feet and 7,272-92 feet. Yount Lee Oil Co.'s No. 11 Gulf Land fee, about one-quarter mile from nearest production in the northwest extension area, was flowing around 100 bbls. oil daily by heads at 6,090 feet. It is believed the well will make a good producer as soon as it is cleaned properly.

In the West Hackberry Field, Moon Oil Co. is reported to have sold the Raymond Sanner lease of 10 acres to Sam Skaar of Shreveport for a reported consideration of $25,000. The lease has four pumping wells with an output of 65 bbls. daily.

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**SYFO CLINOGRAPH**

# Twelve Completions in the Lower Eastern Fields; June Completions Highest Month Since 1931

By STAFF CORRESPONDENT

PITTSBURGH, Pa., July 2.—Twelve wells were completed in the lower eastern fields during the week of which only three were producers with an initial production of 62 bbls. There was, also, one dry hole. In spite of the fewer completions, there were interesting developments in all districts.

The total of the number of wells completed during June was higher than in any month since the latter part of 1931. It evidences the partial recovery of the eastern fields. Pennsylvania Grade crude still is in demand and from the lower eastern fields it is still inadequate and is being drilled for and also old wells are being reconditioned. In the Southwest Pennsylvania fields present production is again on a par with 1929.

In Southeast Ohio, during the week, only one well was completed. In the southwest quarter of Section 5, Jackson Township, Muskingum County, Pure Oil Co. completed No. 7 on the Hoover Brothers lease in the Clinton sand at 2,963 feet. It produced 10 bbls. natural the first day, which was increased to 34 bbls. a day after shot.

## WEST VIRGINIA

Two producers were completed in West Virginia. In Murphy district, Ritchie County, South Penn Oil Co. completed No. 14 on the Haught Lambert farm in the Salt sand and it produced 18 bbls. the first day after shot.

In Roane County, Frank Finley and others completed a second test on the W. Hunter Smith farm in Geary district in the Big Lime at 1,749 feet, showing for 10 bbls. a day from that formation. The hole will be drilled to the Injun sand and if no pay is found there the Lime will be shot with acid. It is on Big Sandy Creek, 2,500 feet southeast of No. 76 on the O. D. Stockley farm.

In Center district, Gilmer County, No. 1 on the Leola Blackshere farm, which was reported as a 4-bbl. producer in the Berea sand, was drilled deeper to 2,200 feet, the shale. It is, however, still a Berea producer and is now making about 15 bbls. a day. This well is 700 feet north of the Godfrey L. Cabot, Inc., on the A. H. Blackshere farm, which is maintaining a heavy production.

### Gas Wells

There were no large gas wells completed in West Virginia. In Calhoun County Cain and Rothwell completed a test on the T. H. Knight farm in Sheridan district in the Injun sand and have a showing of about 200,000 feet a day.

In Gilmer County, about 1½ miles northeast of the heavy production in Center district, McCall and others completed a test on the E. G. Rohrbough farm as a gas well. The sand will be determined later.

In Kanawha County, Godfrey L. Cabot drilled No. 6 on the Campbells Creek Coal Co. tract in Malden district through the Berea sand to 2,203 feet. It proved dry.

In Monongalia County, near Jakes Run in Clay district, Dunn Mar Oil & Gas Co. drilled deeper No. 9 on the Asa Tennant lease through the Fifth sand to 2,895 feet. It will make a small gas well.

In Putnam County, Midway Cities Gas Co. completed a test on the Switzer heirs farm in Scott district in the Berea sand at 2,145 feet, showing for about 116,000 feet a day.

In Ritchie County, about 1,000 feet west of the Lost Run Injun sand streak in Clay district, Glen F. McBurney and others completed a second test on the Hugh Ball farm in the Keener sand as a 400,000-foot gas well. It was drilled to the Injun sand, 1,944 feet, which was dry. In Murphy district, Everett Starcher and others completed a test on the Daniel Wilson farm in the Injun sand at 1,980 feet showing for 384,000 feet of gas a day. In this district, Ira Roberts and others drilled a test on the W. T. Baker farm through the Big Injun to 2,055 feet and it is a gas well gauging 275,000 feet a day.

### Drilling in West Virginia

There is drilling in most sections of West Virginia at present and many new tests are starting. In Boone County, Godfrey L. Cabot, Inc., is drilling at 1,600 feet on the Sidney White farm in Washington district. In Sherman district, his No. 53 on the Federal Coal Co. land is approaching the pay. His No. 3 on the J. Q. Dickinson farm is drilling below 2,000 feet. This operator has a rig standing for No. 54 on the Federal Coal Co. lease and one for No. 3 on the Central Trust Co. lease, both in this district. Pure Oil Co. has Nos. 66 and 67 on the Federal Coal Co. tract drilling and is spudding in No. 68 on the same tract. This company is setting the machine for a second test on the Lafollette, Robson and Prichard tract C. In No. 260 on the Williams Coal Co. lease, this company is drilling by the tools at 785 feet and has a rig standing for No. 256.

In Cabell County, R. H. Adkins and others are drilling a new test on the C. P. Rousey farm in McComas district. In this district, Ora Ann Gas Co. is drilling at 1,540 feet on the George H. Midkiff farm; H. H. Baker Gas Co. has reached 1,200 feet on the Augusta Beckett farm, and West Virginia Gas Co. has started drilling the second test on the John J. Porter farm. In Guyandotte district, Leonard Paugh is drilling at 3,470 feet on his own property.

In Calhoun County, Godfrey L. Cabot, Inc., is rigging up to drill No. 9 on the W. T. Rafferty farm in Sherman district to deeper sands. In this district, Kenny Hunt and others have a rig standing on the I. B. Fowler farm. H. B. Scott has started drilling on the P. Fling heirs farm. F. F. McIntosh has reached 1,765 feet in No. 4 on the O. S. Bennett farm. Mollahan and Poling are drilling at 1,440 feet on the Johnathan Burrows farm, a test. In Washington district, Ohio Valley Gas Corp. started spudding on the N. L. Norman farm and shut down for water. In Lee district, Mudlick Oil & Gas Co. has reached 1,325 feet in a second test on the Almeda Meadows farm. In Center district, Starcher and Richards are on top of the Injun sand on the James Wilson farm.

In Gilmer County, A. E. Ellis and others have part of the material on the ground on the Edward Reynolds farm in DeKalb district. In Center district the Hope Construction & Refining Co. has reached 1,400 feet in No. 3,570 on the A. H. Blackshere farm with two locations standing.

### Harrison County

In Harrison County, Raad and Moses are drilling at 1,300 feet in the second test on the A. P. W. Flannigan farm in Ten Mile district. In Jackson County, H. F. Parsons and others have cleared location on the W. L. Kelly farm in Washington district.

In Kanawha County, Godfrey L. Cabot, Inc., has four wells drilling. No. 6 on the William P. Tompkins farm in Malden district is down 478 feet. No. 43 on the Arabella D. Huntington lease in Cabin Creek district has reached 2,090 feet, No. 44 is down 1,613 feet and No. 45 has started drilling.

In Marion County, Monroe and Laughlin have reached 1,450 feet on the Howard Rice farm in Mannington district. In the same district, Carnegie Natural Gas Co. has a rig standing for a second test on the Martha E. Keenan farm.

In Monongalia County, Harry L. Tennant is drilling at 2,680 feet in No. 5 on the Wise and Tennant lease in Battelle district. In Cass district, Housch Glass Co. has reached 1,500 feet on the Charles Barrickman farm, a test. In Clay district, Chartiers Oil Co. is building the rig on the Simon Shriver heirs farm.

In Mingo County, F. H. Yates has made a location on his own property in Harvey district. In Lincoln County, Kanawha Utilities & Gas Co. has reached 1,100 feet on the W. S. Snodgrass farm in Sheridan district, a test. In Putnam County, J. V. Reishman is drilling at 1,375 feet on the James Webb farm in Scott district.

In Ritchie County, South Penn Oil Co. has made a location for No. 15 on the Haught Lambert farm in Murphy district. In Grant district, Adams and Satterfield have made a location on the A. L. Mullenaux farm. L. N. Rinehart is drilling at 1,250 feet on the W. E. Rinard farm. Smith and Anderson are down 1,500 feet in a second test on the Thomas Maloy farm and the Petroleum Products Co. a similar depth on the Jennie Carroll farm, a test. Horner and Hank have reached 1,310 feet on the J. W. Alkire farm, No. 1. In Clay district, John Deem and others are drilling at 1,900 feet on the L. E. Robinson farm and R. E. Elder and others reached 1,000 feet on the J. W. Leonard farm and shut down.

### Roane County

In Roane County United Fuel Gas Co. has built a road to a location on the S. C. and Lucy A. Ross farm in Geary district. In Reedy district, Law and Leeton are down 545 feet on the O. M. Tatterson farm. In Smithfield district, R. L. McCulty is drilling deeper on the Josephine Young farm and has reached 1,917 feet. Guy Bogess is building a rig on the O. M. Young farm. In Curtis district, Henderson Oil Co. has reached 775 feet on the E. S. Ball farm, a test, and in Spencer district, J. D. Silcott is drilling at 1,600 feet on the John B. Lukens farm.

In Tyler County the Ohio Oil & Gas Co. has reached 1,775 feet on the Rebecca Ash farm in Meade district. In Centerville district, Kinsley Baker and others have a rig standing on the L. A. and E. E. Riggs farm.

In Wayne County, Fairfax Gas Co. has started drilling on the H. C. Taylor farm in Ceredo district. In Wetzel County, G. N. Yoho is hauling in the timbers on the George A. Smith farm in Proctor district. In Green district, Rowe Brothers have a rig on the F. B. James farm.

In Wood County H. O. Athey and others have moved in a drilling machine on the D. W. Chichester farm on the headwaters of Big Run in Williams district. On Plum Run in this district, Charles S. and Lillian Smith have moved a machine for No. 6 on the Tim McAtee farm.

## SOUTHWEST PENNSYLVANIA

Two gas wells were completed in Southwest Pennsylvania. The more important one was the test of the Natural Gas Co. of West Virginia on the William C. and Susan Bedillion farm in East Findley Township, Washington County. It was completed in the Fifty-foot sand and is good for 500,000 feet a day. It is about 1½ miles north of the J. N. Clutter producer.

In Greene County, Wasmuth and Callahan completed a second well on the F. W. Baldwin farm in Richhill Township at a total depth of 1,360 feet. The top of the gas sand was at 1,345 feet and extended to 1,358 feet with gas gauging at 82,000 feet a day showing at 1,347 feet.

In Amwell Township, Washington

(Continued on Page 88)

# Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ended June 23 totaled 343,116,000 bbls., a decrease of 372,000 bbls. from the total of 343,488,000 bbls. on hand at the end of the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease, which followed an increase of 287,000 bbls. during the previous week, comprised decreases of 340,000 bbls. in domestic crude stocks and 32,000 bbls. in foreign crude stocks.

Current reports of the industry indicate that crude oil production for the week ended June 23 was of practically the same level as for the week ended June 16, but that runs to stills increased from a daily average of 2,535,000 bbls. for the week ended June 16 to an average of 2,580,000 bbls. for the week ended June 23. Daily average imports of crude amounted to 110,000 bbls. as compared with an average of 90,000 bbls. for the previous week.

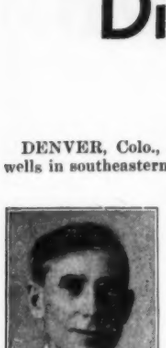
CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

| Grade of crude oil— | Stocks held by reporting companies June 16, 1934 (bbls.) | Stocks held by reporting companies June 23, 1934 (bbls.) | Change from June 16, 1934 (bbls.) |
|---|---|---|---|
| Pennsylvania Grade | 4,646,000 | 4,666,000 | +20,000 |
| Other Appalachian, including Ky. | 1,203,000 | 1,180,000 | —23,000 |
| Lima—N. E. Indiana—Michigan | 1,480,000 | 1,473,000 | —7,000 |
| Illinois—S. W. Indiana | 11,310,000 | 11,343,000 | +33,000 |
| N. Louisiana and Arkansas | 10,951,000 | 10,875,000 | —76,000 |
| West Texas and S. E. New Mexico | 28,879,000 | 29,115,000 | +236,000 |
| East Texas | 41,825,000 | 42,095,000 | +270,000 |
| Other Mid-Continent | 161,561,000 | 161,104,000 | —457,000 |
| Gulf Coast | 16,662,000 | 16,330,000 | —332,000 |
| Rocky Mountain | 27,871,000 | 27,878,000 | +7,000 |
| California | 33,856,000 | 33,845,000 | —11,000 |
| Total domestic crude | 340,244,000 | 339,904,000 | —340,000 |
| Foreign crude | 3,244,000 | 3,212,000 | —32,000 |
| Total crude | 343,488,000 | 343,116,000 | —372,000 |

# Several Big Wells in Southeastern New Mexico; Disappointment in Northeastern Colorado

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., July 2.—Several big wells in southeastern New Mexico marked the week's developments in that area. Gypsy Oil Co.'s No. 8 West Grimes, in the Hobbs Pool, gauged 17,625 bbls. in 24 hours. Skelly Oil Co.'s No. 2 Turner, an edge well in same pool, is estimated at 200 to 300 bbls. Shell Petroleum Corp.'s No. 2-B State responded to acidizing by increasing from 1,947 bbls. to 10,400 bbls. a day. Ohio Oil Co. made a location 5 miles southeast of development in the Eunice area. General Crude Oil Co.'s No. 1 Cushing, second oil well in the Cooper area, made 100 bbls. an hour after being treated. Three new locations were made by the Phillips Petroleum Co. Repollo Oil Co.'s No. 1 Stephens, in the Jal Pool, gauged 170 bbls. an hour through the tubing. An important show was encountered in the Getty Oil Co.'s No. 2 Cook & Ironsides in Eddy County.



Northeastern Colorado had another disappointment when Ramsey Petroleum Co.'s No. 1 Scriven drilled into water in the Dakota. Trojan Oil & Gas Co.'s deep test near Lamar in southeastern Colorado is at an interesting stage. One well was abandoned in Fremont County.

The Earl W. Reeder test on the Overland Dome in Wyoming cut another sand and is showing more oil 100 feet off the objective. The Kinney-Coastal Oil Co.'s test to the Lakota, on the Pilot Butte Dome, found water and will plug back and complete as a gas well.

Two wells, one swabbing 242 bbls. the first 24 hours, were completed in the Cut Bank Field in Montana. Four new locations were released. A sale of Indian leases is expected to result in increased drilling activity.

## NEW MEXICO

### Hobbs Area

The potential for the Hobbs Pool as of June 16 was increased to 1,860,120 bbls. daily, a gain of 9,300 bbls. compared with June 1, due to one additional unit coming into production. There are now 187 units of 40 acres each on production, of which one is given a special allowance on account of water and the allowable outlet of 36,835 bbls. daily is prorated among the other 186 units.

One completion, an inside well, was reported in Gypsy Oil Co.'s No. 8 West Grimes, NW SW NW Section 32-18-38, which made 17,625 bbls. of oil and 9,000,000 feet of gas on a company gauge at a total depth of 4,199 feet, in lime. The 7-inch is a 3,954 feet.

Skelly Oil Co.'s No. 2 Turner, C NE NW Section 34-18-38, an outside edge well in the southeastern part of the field in the Hobbs townsite, is a near completion and will make a small well. It was drilled to 4,203 feet and an effort is being made to swab it in. It is estimated at 200 to 300 bbls. daily and may be acidized in an effort to increase its production.

Shell Petroleum Corp.'s No. 2-B State, NE cor. NW Section 33-18-38, also an outside well, which was reported a completion last week with an initial production of 1,947 bbls. through the casing, responded favorably to acid treatment and made 10,400 bbls. of oil and 5,250,000 feet of gas on a company gauge.

Shell Petroleum Corp.'s No. 3 Berry, NE cor. SE Section 31-18-38, is drilling at 3,353 feet in anhydrite and lime. It cut the Bowers sand at 3,180-88 feet and a drill stem test at 3,150-98 feet showed 17 feet of oil and 300 feet of drilling water. The Bowers sand is held in reserve for future developments and none of the wells are produced from that horizon.

Repollo Oil Co.'s No. 3 Grimes, SW NW NW Section 28-18-38, is waiting at 2,712 feet after cementing 10-inch at 2,703 feet with 150 sacks. Noble Brothers' No. 2 Shell-State, E NE SW Section 24-18-37, an outside well and a south offset to their No. 1 State, which made 12,600 bbls. initial, is drilling in at 4,071 feet, in lime. The 7-inch was cemented at 3,966 feet with 225 sacks. Continental Oil Co.'s No. 1 Grimes, SW cor. SE Section 28-18-38, is drilling at 2,838 feet in lime and had gas shows at 2,781-85 and 2,831 feet.

### Eunice Area

The 2,598 bbls. daily production allotted to the Eunice area by the New Mexico allocation committee was prorated among 14 producing units of 40 acres each on the basis of 222 bbls. to two units producing at capacity and the remaining 2,376 bbls. among 12 units, or a top allowable of 198 bbls. to each unit.

Atlantic Oil Producing Co. has two wells, Continental Oil Co. five wells, Getty Oil Co. one well, Shell Petroleum Corp. one well, Tide Water Oil Co. three wells and California Co. one well, all of which take the top of 198 bbls. each. Empire Gas & Fuel Co.'s No. 1 Closson is allowed capacity production of 75 bbls. and the Shell Petroleum Corp.'s No. 1 capacity of 147 bbls.

One new location was made, Ohio Oil Co.'s No. 2 State-McDonald, C NW SW Section 14-22-36, for which cellar has been dug. This will be an important test as it is 5 to 6 miles southeast of the present activity. The only other well in the immediate vicinity is the same company's No. 1 State-McDonald, a mile west, completed in 1930 for 24,000,000 feet of gas and 10 bbls. of oil after plugging back from 3,904 feet to 3,878 feet. There is a strong possibility the Eunice production may extend all the way down to the new oil wells in the Cooper area.

Atlantic Oil Producing Co.'s No. 2-B State, C NE SE Section 8-21-36, is drilling at 3,715 feet in sandy lime after cleaning up a fishing job. Continental Oil Co.'s No. 20-C-1 State, C NW NW Section 20-21-36, is rigging up rotary, and its No. 20-C-2 State, C SW NW Section 20-21-36, has completed derrick and is shut down for tools. Same company's No. 17-A-3 A. E. Meyers, C SW NW Section 17-21-36, is drilling at 3,562 feet in lime. Texas Co.'s No. 1 Rector, C NE SE Section 30-21-36, is digging cellar, and Shell-Devonian's No. 1 State, C NW NE Section 20-21-36, is still a location. Gypsy Oil Co.'s No. 1 Bell-State, C SW SE Section 8-21-36, is drilling at 3,400 feet in lime, and Repollo Oil Co.'s No. 1 State, NE NW NE Section 19-21-36, is drilling at 1,260 feet in red rock.

### Cooper Area

The 456 bbls. daily production allotted the Cooper-Lynn area by the New Mexico allocation committee was prorated among five units of 40 acres each for the last half of June. Three wells of Empire Gas & Fuel Co. in Sections 20-21-36 are allowed capacity production of 50, 17 and 5 bbls. The two wells of the General Crude Oil Co. are held down to the top allowable of 192 bbls. each. No provision was made for General Crude Oil Co.'s No. 1 State in Section 16-23-36.

General Crude Oil Co.'s No. 1 Cushing, SW SE NW Section 23-24-36, a gas well which was deepened to the oil pay, was treated with 1,000 gallons of acid and completed. Initial production before treatment was 10 bbls. an hour from total depth of 3,505 feet. After treatment it made 100 bbls. an hour through the casing and 45 bbls. an hour through a three-fourth's inch choke. It was then beaned down to 9 bbls. an hour through a seventeen-sixty-fourth inch choke. The back pressure on the casing was 1,150 pounds, and on the tubing, 975 pounds. The 7-inch is at 3,465 feet. It made 3,900,000 feet of gas with the oil.

Three new locations were released by Phillips Petroleum Co., making four operations for this company getting under way. Its No. 2 Woolworth, NW NE SW Section 23-24-36, a south offset to No. 1 Cushing, has cellar and pits completed. Its No. 3 Woolworth, SW cor. NW Section 23-24-36, between the two General Crude Oil Co. producers, is digging cellar and pits, and its No. 4 Woolworth, C SW SW Section 23-24-36, has cellar and pits completed. Same company's No. 1 Woolworth, NW cor. SW Section 23-24-36, is rigging up rotary.

Humble Oil & Refining Co.'s No. 1 Cooper, C NW NE Section 23-24-36, is building rig, and General Crude Oil Co.'s No. 2 Meyers, C SE SE Section 22-24-36, is still a location. Stanolind Oil & Gas Co.'s No. 1 Meyers, SE cor. NE Section 22-24-36, is waiting for tools after spudding to 204 feet. Texas Co.'s No. 1 Ogg, C SW NE Section 35-24-36, has derrick up and is moving in tools.

### Lea Area

The 1,479 bbls. daily allocation for the Lea Pool from 10 units for the last half of June was prorated at capacity for five units and 198 bbls. each for the remaining five units. General Crude Oil Co. has three wells on production and Texas Co. 7. The only drilling well is Texas Co.'s No. 2-B Lynch, C SE SW Section 27-20-34, which is drilling up bailer.

### North Lea Area

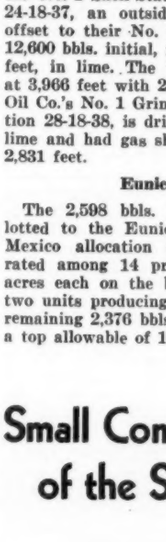
The new area to the north of the Lea Pool where Texas Co. is completing a producer has been designated as North Lea and allotted 169 bbls. daily, of which 150 bbls. daily is for Texas Co.'s No. 1 Lea, not yet completed, and 19 bbls. daily for Empire Gas & Fuel Co.'s No. 1 Dexter in Section 18-20-34.

Texas Co.'s No. 1 Lea, SW cor. NW Section 14-20-34, is drilling at 3,635 feet in lime and swabbing and flowing 80

# Small Completion Reported on East Side of the South Turner Valley Structure

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, July 2.—On the east side of the South Turner Valley structure, Northwest Co.'s No. 1 Calgary & Edmonton-Longview, LSD 5, Section 27-18-2w5, has finished at 6,220 feet with a small wet gas flow and crude naphtha recovery between 15 and 20 bbls. a day. The well was in a fault at 6,207 feet. The test was the only one undertaken by Imperial Oil, Ltd., in more than a year.



In the Mercury tract, Mercury Oils' No. 6, LSD 12, Section 4-19-2w5, is below 2,550 feet after sidetracking lost casing.

North of Merland's No. 1 producer, Nolan-Hungerford Royalties' No. 1, LSD 5, Section 34-18-2w5, is moving heavy-duty rotary outfit for completion of old Rand Petroleums' No. 1, standing with 18-inch casing cemented at 280 feet. Location is on the east side of the structure.

In Section 28-18-2w5, Spooner Oils' No. 5 Anaconda, LSD 1, is below 4,760 feet. Carleton Royalties' No. 1, LSD 2, is rigging up. Northwest, Richfield Royalties' No. 1, LSD 5, same section, is below 3,300 feet. It got a heavy pocket of wet gas around 3,100 feet. Immediately east, British Dominion Oil & Development Corp.'s No. 4, LSD 6, is at 1,500 feet.

Pacalta Oils' No. 1, LSD 7, is resuming at 5,055 feet. It is in the lime with a small intermittent wet gas flow. To the east, Publix Oil & Gas Co.'s No. 1, LSD 8, is at 3,800 feet, after encountering another flow of wet gas. The drill is in a very hard formation.

In the NW cor. of Section 28, Turner Valley Royalties' No. 1 Bell & Brown, N half LSD 13, is below 1,800 feet. To the east, Century Royalties' No. 1, LSD 14, is at 5,260 feet. In the northeast corner, Director Royalties' No. 1, LSD 16, has plugged back after a fishing job at 4,170 feet, and is redrilling.

In Section 21-18-2w5, Highwood-Sarcee Oils' No. 1, LSD 16, has resumed at 5,548 feet. It is planned to drill with the small bit as a precaution against heavy gas pressure.

The Highwood-Sarcee well had the unique experience a few days ago of doing a successful fishing job without the aid of the crew. The string of tools were thought jammed or frozen at 5,548 feet and special fishing equipment was procured. When the crew started with this equipment, it was found the heavy accumulated gas pressure had forced the string, weighing close to 2 tons, to the top of the hole, so that it was easily removed by hand.

### Far South Tests

In the new southeast extension, in Section 21-18-2w5, Myers & Wright's No. 2 Pacalta, LSD 14, is preparing to resume at 550 feet. Farther south, Union Freehold Corp.'s No. 1, LSD 8, is below 3,176 feet. North West Royalties' No. 1 Prairie, LSD 5, is unofficially reported drilling. In the far south end, Highwood

(Continued on Page 94)

bbls. daily. This is an increase of 11 bbls. over a week ago at 3,620 feet.

**Jal Area**

The 3,034 bbls. daily production allotted to this area was prorated among 26 units of 40 acres each. Capacity production of 1,458 bbls. was assigned to 18 units and a top allowable of 197 bbls. each to the remaining eight units.

One completion was reported in the Repollo Oil Co.'s No. 1 Stephens, SW cor. NE Section 13-25-36, which gauged 170 bbls. an hour through the 2½-inch tubing at 3,325 feet, total depth. The tubing is at 3,311 feet. Continental Oil Co.'s No. 13-A-1 Sholes, C SW SE Section 13-25-36, is fishing for tools at 3,251 feet.

**Eddy County**

Getty Oil Co.'s No. 2 Cook & Ironsides, C SW NW Section 8-20-29, 4 miles northwest of the Getty Pool and 3 miles west of its No. 1 Cook & Ironsides, a dry hole, had a show for 15 bbls. a day at 1,100-24 feet, and a show of water at 1,050-65 feet. It is drilling at 1,136 feet in lime. This show is important in indicating structural conditions in the Twin Mounds district to the northwest of the Getty black oil pool. The oil in the new test is 27 degrees gravity, or about 8 degrees better than in the Getty Pool.

Guess & McIntosh's No. 1 State, NW cor. Section 8-26-28, Red Bluff district in southern Eddy County, began spudding June 9 and is drilling at 300 feet in anhydrite and shale. Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, western Eddy County, was deepened to 4,980 feet and is shut down for orders.

In the Artesia area, Welch & Compton's No. 1-A Smith, NE cor. SW Section 8-18-27, began spudding June 6 and is drilling at 587 feet in sand. R. D. Compton's No. 6 Brainard, SE cor. Section 5-18-27, is drilling at 1,630 feet in dark lime, and Flynn, Welch & Yates' No. 68 State, NW SW NW Section 27-18-28, is drilling at 2,284 feet in white lime. Etz, Hammond & Keyes' No. 1 State, C SE SE Section 16-17-28, is moving in materials.

**Santa Fe County**

C. C. Owen and others' No. 1 Cantwell, NW cor. Section 5-10-9e, near Stanley, is trying to get a water shutoff with the 10-inch at 425 feet, and Elmer Fisher's No. 1 Hill, Section 6-10-7e, is drilling at 1,830 feet.

**San Juan County**

R. C. Oswell's No. 5 Government, NE SE NE Section 33-30-11w, Aztec district, encountered oil at approximately 1,350 feet and is estimated at 30 bbls. initial. Nick Spatter's No. 1, C NE SW Section 32-31-11w, northwest of Aztec, a new operation, is drilling at 200 feet. A. E. Haney's No. 1 Hare, SE SE Section 14-29-11, is drilling at 650 feet, and H. C. Stratton's No. 1 Grauel, SW NE SE Section 25-30-1w, is drilling at 1,440 feet. Aztec Oil Producers, Inc.'s No. 2, C SE SE Section 28-30-11, is fishing for tools at 1,490 feet.

**San Miguel County**

Cabra Springs Oil & Gas Co.'s No. 1 Cabra Springs Ranch, C NE NE Section 22-12-22, Pino Mesa, is drilling at 3,340 feet in brown sandy shale with rainbows showing.

**Curry County**

George Schoonmaker and others' No. 1 Hart, C SE SE Section 13-2n-32, Melrose district, has let contract to Flaherty Brothers, of Tulsa, and is ready to spud.

**Valencia County**

Western Natural Resources Corp.'s No. 2 San Clemente grant, SW cor. NE Section 5-6n-1e, De Chaves district, which has been shut down at 5,155 feet for some time, has let contract to M. Harris, of Dallas, to deepen 800 to 1,000 feet and is moving in rotary tools.

**COLORADO**

**Weld County**

Northeastern Colorado yielded another disappointment when Ramsey Petroleum Corp.'s No. 1 Scriven, C NW Section 22-7n-59, Buckingham district, drilled into the Dakota and encountered water. It will be plugged and abandoned. This well is three-fourths mile southwest of the company's No. 1 St. Anthony, completed as a gas well in the Muddy two years ago. The Scriven well was drilled through the Muddy at 6,794-6,818 feet last fall and shut down until three weeks ago when operations were resumed to go to the Dakota. The Muddy was dry. The Dakota was topped at 6,891 feet and the hole was drilled to 6,894 feet, water rising 3,000 feet. When work was resumed three weeks ago there was 3,500 feet of oil in the hole which had accumulated since last November. Swabbing indicated the oil was coming in at the rate of only 2 or 3 bbls. a day.

Ramsey's No. 1 St. Anthony, SW NE SE Section 15-7n-59, made 6,000,000 feet of gas a day from the Muddy at 6,680-6,700 feet. It had 6 feet of soft Dakota sand showing oil at 6,760-65 feet, followed by water. The Dakota was plugged off with eight sacks of cement and the well completed as a gasser. Last fall, while pulling on the well for gas to drill No. 1 Scriven, some water made its appearance and it was shut in. Work has been resumed and 5,500 feet of fluid, of which 1,600 feet was oil, was standing in the hole. No. 1 Scriven, three-fourths of a mile southwest, is 20 feet lower than No. 1 St. Anthony. The company accepts the result in the Scriven well as condemning the territory west of the St. Anthony and leases are being surrendered. However, 3,000 to 4,000 acres east of the St. Anthony are being retained and another test will be drilled on that side of the discovery at some location not yet determined.

While results of wildcatting in northeastern Colorado so far have been discouraging, there appears to be no disposition to abandon the area. Several large blocks remain to be tested and until more wells are drilled the future of the area remains uncertain. Continental Oil Co. has had seismograph surveys made in several areas and other companies have had crews at work in the field. E. L. DeGolyer, former president of Amerada Corp., is reported preparing to spend the summer in Colorado and will give his personal attention to the work of two Geophysical Research Corp. crews to be in the field. The location of this work or by whom employed has not been disclosed.

**Moffat County**

Texas Co.'s No. 1 Van Schaick, SW cor. Section 19-12-100, Hiawatha district, is running the 13½-inch at 975 feet, total depth. Mountain Fuel Supply Co.'s No. 4-B Wilson, C NE NW Section 23-12-100, is drilling at 1,950 feet, averaging around 250 feet a day the past week. Same company's No. 1 Murdock, SE cor. NE Section 24-12-101, has rig completed and will wait for completion of No. 4-B Wilson before spudding.

Stanolind Oil & Gas Co.'s No. 6 Parkinson, Lot 37, SW Section 23-4n-92, Iles Domes, is cementing pipe at 3,318 feet on top of the Sundance sand and will be an early completion.

**Grand County**

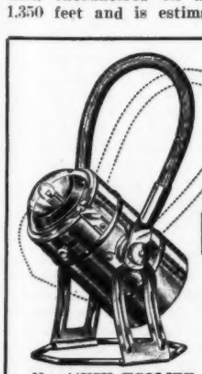
Colorado Oil & Refining Co.'s No. 1 Linke, NE SW SW Section 13-1n-77, Granby district, is drilling at 450 feet in limey shale and has a small show of oil. This is the second show encountered. The first objective is a sand in the Pierre at around 1,200 feet.

**Fremont County**

John Milner and others' No. 1, SW SE SE Section 30-18-69, Florence district, was plugged and abandoned at 3,515 feet.

**Prowers County**

A wildcat in southeastern Colorado, near Lamar, is now attracting considerable attention. This is Trojan Oil & Gas Co.'s No. 1 Lotus Oil, NW NE NE Section 15-23-46, which is a test of the

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Pennsylvanian and lower formations which are too deep for the drill in northeastern Colorado. The Trojan well is reported bottomed at 3,314 feet and trying to lower the 8¼-inch to bottom. At this depth a petroleum odor is distinctly noticeable about the well. Visitors are excluded, not because the company is unwilling to give out information, but as a safety precaution while working with the pipe. The drillers evidently are looking for something interesting close to present depth and efforts are being made to keep the hole in good condition for any eventuality.

**Routt County**

Texas Co.'s No. 1 Sampson, SE NE SE Section 2-1s-85, King Mountain, is rigging up, and its No. 5 Carstarphen, NW NE NW Section 5-6n-86, Tow Creek, is drilling at 1,909 feet.

## WYOMING

**Carbon County**

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, which has shown considerable oil at several horizons, but which is logging entirely different from other known sections in that district, again is attracting attention. It is drilling and underreaming 4¾-inch at 4,827 feet and is believed to be less than 100 feet off the true Dakota sand. It cut a hard sandstone at 4,777-4,802 feet which is now believed to be the Muddy instead of the horizon above which at the time it was drilled was partially identified as that formation. More oil came into the hole, but no test was made as it is loaded with water to hold down the pressure.

Ohio Oil Co.'s No. 1 Morris, C NW SE Section 6-20-77, Diamond Dome, is setting the 12½-inch at 299 feet.

**Fremont County**

Kinney-Coastal Oil Co.'s No. 1 Chatterton-Weeks, C SW NE Section 22-3n-1w, Pilot Butte, a gas well in the Muddy at 3,560-3,680 feet, which was deepened as a test to the Lakota, topped the objective horizon at 4,095 feet. At 4,105 feet some salty water began to appear. The hole was drilled to 4,125 feet and will be plugged back and completed as a gas well in the Muddy. The rig will be moved to the Garland Dome in Big Horn County.

Tropic Oil Co.'s No. 1 Government, C SE SW Section 34-27-90, on the north flank of the Lost Soldier Field, is reported to have topped the Dakota at 1,900 feet where it encountered a good show of oil. Drilling was suspended to run pipe. The company has let contracts to Coale & Fertig for three wells in this district and the first one will start just as soon as the drilling well is completed. The Monongahela Oil Co.'s No. 1 Wisda, NE SE SE Section 13-28-93, Crook's Gap district, is drilling at 1,390 feet.

The Stanolind Oil & Gas Co. is reported to have completed extensive geophysical work which it has been undertaking in Fremont County, particularly in the Poison Creek district 6 miles south of Shoshoni. It has several thousand acres under lease which has been geologized and checked with magnetometer, followed by the seismograph survey. While results have not been disclosed, it is reported that the company is planning to make a test soon. The crew was in the field for several months.

**Big Horn County**

Kinney-Coastal Oil Co. has made a tentative location on the Garland Dome for its No. 1 Sessions, NE NE NW Section 32-56-97, and is preparing to move rig from the Pilot Butte Field. The company has a large acreage on the structure and has made application to Administrator Ickes for permission to drill this well to test its block. The Ohio and Utah Southern Oil companies have a unit agreement for the operation of part of the Garland acreage, but the Kinney-Coastal and other acreage is not included. The Kinney-Coastal company opposed this agreement on the ground that until the other acreage was drilled the area of the proven ground could not be determined and asked for authority to put down this test. It will not be drilled until permission is given. The location is half a mile west of Ohio's No. 1 Eastman, rated as a 5,000-bbl. well when completed, and the same distance south of a well drilled by Utah Southern Co.

Ohio Oil Co.'s No. 2 Byron-Union, C SE NE Section 22-56-97, East Byron, is building rig. Rocky Mountain Drilling Co. has the contract. It will be drilled with rotary.

**Hot Springs County**

California Exploration Co.'s No. 1 Government, NE SE NE Section 12-44-97, Waugh structure, is drilling at 1,400 feet. Argo Oil Co.'s No. 10 Ellen, NW SE NW Section 14-44-98, Hamilton Dome, is drilling at 1,090 feet with 250 feet of water in the hole. The 16-inch is at 40 feet and the 13-inch at 190 feet.

**Park County**

Stanolind Oil & Gas Co.'s No. 6 Rosenberg, NW cor. Section 25-58-98, Frannie Dome, has rig up.

**Albany County**

Ohio Oil Co.'s No. 1 Chappell, C SE NW Section 28-21-76, East Rock Creek, is drilling at 3,070 feet in the red beds (Chugwater).

## MONTANA

**Glacier County**

Drilling operations in the Cut Bank area probably will be increased considerably and extended to the west and northwest of the present development as a result of the offering for sale at Browning on July 9 at 10 o'clock a.m., leases on a large block of Blackfeet Indian Reservation land. The land is favorably located for the production of oil, being mostly within what may be regarded as a proven area within or adjacent to the field. It will be offered in small parcels varying from 60 to 170 acres each, and each lease will require one well within 90 days. In March, 1933, a block of 2,127 acres was offered at auction and Texas Co. was the sole bidder, offering a bonus of $2.50 an acre. The bid was rejected by the Indian council as likewise was another for a higher figure subsequently offered by the company. The council then countered with an offer at a higher price which the company did not accept. The Indians were reported desirous of having the land offered in small tracts instead of one large block.

Two completions, one much better than the average well, three near completions and four new locations were reported in the Cut Bank Field.

Texas Co.'s No. 2 fee, C Lot 8, Section 15-35-6w, one of the best wells completed in several weeks, swabbed 242 bbls. the first 24 hours from a total depth of 2,902 feet, and 169 bbls. the second period. Lon Crumley's No. 2 Weaver, Lot 8, Section 27-35-6w, on the northwestern edge of the development, has 2,000 feet of oil in the hole from sand at 2,907-38 feet. Its total depth is 2,940 feet.

Dakota-Montana Oil Co.'s No. 3 Gilham, Lot 3 (NE NE) Section 3-34-6w, is a near completion, and looks as if it may be a dry hole. Total depth is 2,947 feet. It had a show of oil in the upper sand at 2,860-65 feet, but the lower Cut Bank at 2,884-2,920 feet was dry. Texas Co.'s No. 1-M-357, NE SW SE Section 22-35-6w, looks like a small well, having 500 feet of oil from sand at 2,827-78 feet. Same company's No. 1 Schlag, C SW SW Section 26-35-6w, was shot at 2,883-2,903 feet in an effort to increase production. Results are not yet known. It had 400 feet of oil in the hole before the shot.

The new locations follow:

Montana Headlight Oil Co.'s No. 2-A Williams, C NE NE Section 11-34-6w, rig skidded from No. 2, which was lost at 2,795 feet. Nyhagen-Bell's No. 3 Anderson, NE NW SW Section 26-35-6w, cellar. R. C. Tarrant's No. 2 Getty, NW NW SE Section 2-34-6w, which began spudding June 22; and Texas Co.'s No. 1-M-358 Morrison, Lot 5, Section 22-35-6w, moving in.

Alberta Pacific Consolidated Oil Co.'s No. 4 Matson, W SW NW Section 14-34-6w, is drilling at 1,550 feet, and P. B. Anderson and others' No. 1 Anderson, SW cor. NW Section 26-35-6w, is drilling at 2,500 feet. Annand & Hutchings' No. 1 Bonnett, NW cor. SE Section 10-32-5w, is drilling at 2,420 feet, and their No. 1 Federal Land Bank, NW cor. SW Section 11-34-6w, is rigging up.

A. B. Cobb's No. 3 Walberger, NE SW SE Section 35-35-6w, is rigging up, and Consolidated Gas Co.'s No. 2 Ewing, Lot 4 (SE SE) Section 34-35-6w, has rig on location.

W. M. Fulton and others' No. 2 Haggerty, C NW NW Section 15-34-6w, topped the Colorado at 660 feet and cemented the 10-inch at 693 feet with 50 sacks.

Grant Oil Co.'s No. 2 Yunck, C SW SW Section 14-34-6w, is spudding at 75 feet.

Indian Oil Co.'s No. 1 fee, C SE SE Section 4-34-6w, is drilling at 1,895 feet, and its No. 1 Reickhoff, SW SE Section 3-34-6w, is rigging up.

Lawler & Hoerr's No. 1 Harland, C SW SW Section 5-33-5w, is rigging up.

Montana Headlight Oil Co.'s No. 2 Yunck, C NW SW Section 1-34-6w, is drilling at 1,750 feet. Montana Power Co.'s No. 1 Fuller, near C SE Section 17-33-5w, topped the Colorado at 585 feet and cemented the 10-inch at 720 feet with 50 sacks. Same company's No. 1 Hawkins, C SW Section 17-33-5w, topped the Colorado at 585 feet and cemented the 12½-inch at 590 feet with 50 sacks. Montana Power Gas Co.'s No. 1 Whetstone, C SE NE Section 7-33-5w, topped the Colorado at 495 feet and cemented the 10-inch at 520 feet with 50 sacks.

Nadeau Brothers' No. 3 Van de Mar, W SW NW Section 35-35-6w, is drilling at 2,100 feet.

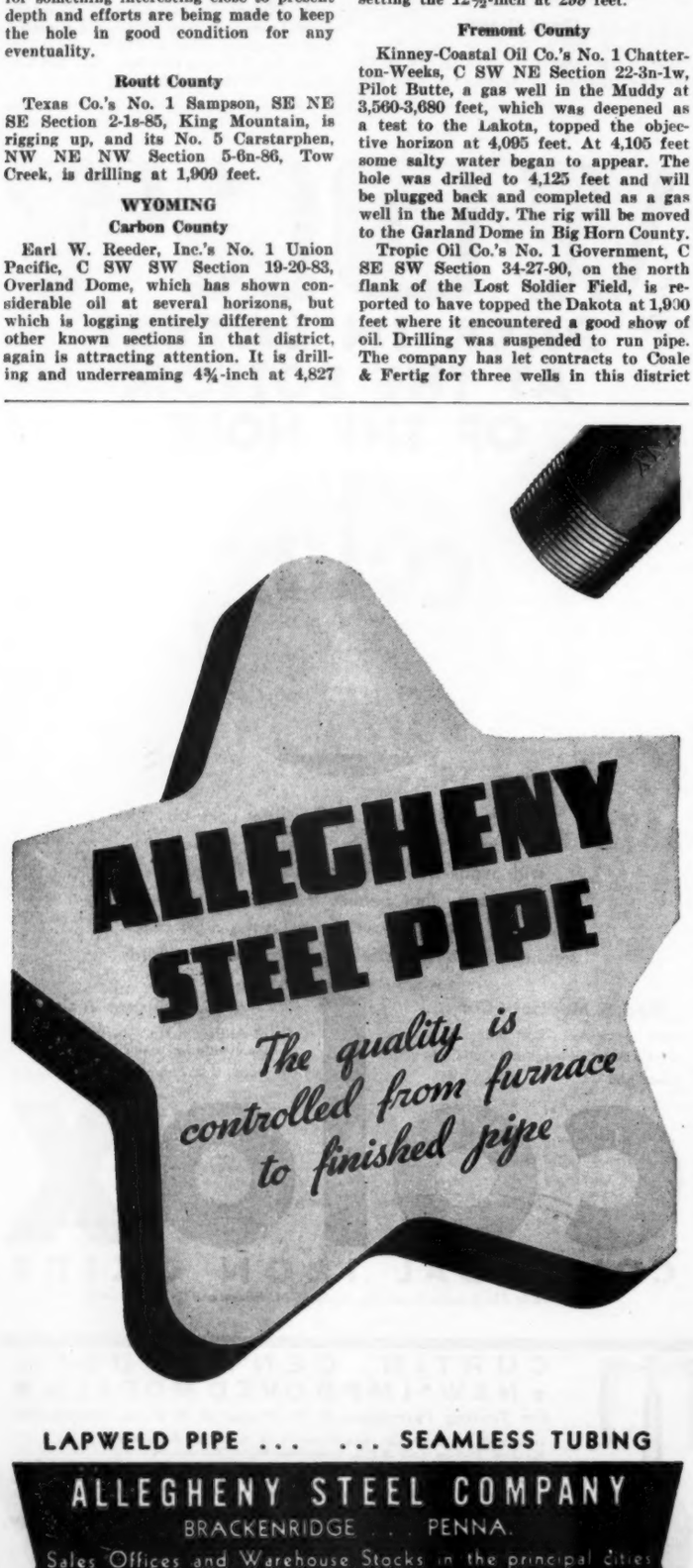
Par Oil Co.'s No. 3 Haines, SW cor. Section 2-34-6w, is drilling at 2,555 feet.

Producers Development Syndicate's No. 1 Eniarson, SW NW NW Section 29-32-4w, 3½ miles southeast of Texas Co.'s No. 1 State, the most southerly well in the field, is moving in 6¼-inch casing to run at 2,697 feet, total depth, before drilling into the lower Cut Bank sand.

Santa Rita Oil & Gas Co.'s No. 2 Hardy, SW NE Section 27-35-6w, is drilling at 1,660 feet, and its No. 3 Whetstone, C NE NE Section 27-35-6w, is drilling at 1,600 feet.

R. C. Tarrant's No. 4 Britton, C SW SW Section 12-34-6w, has rig on location, and his No. 1 Jones, C SW SE Section 31-34-5w, is drilling at 1,610 feet. The Texas Co.'s No. 3 Antrim, E SE SE Section 34-35-6w, is standing with the 7-inch cemented at 2,896 feet, and its No. 4 Antrim, C Lot 3, Section 34-35-6w, is

(Continued on Page 88)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# TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

## Chemicals Used in Refining—Calcium Carbide and Acetylene

Calcium carbide and acetylene are discussed here as a part of a series of short articles about the chemicals of petroleum refining. The first of these articles appeared on this page in the issue of March 15, 1934.—Editor.

Calcium carbide $CaC_2$, is a product of the electric furnace, where a mixture of 60 per cent lime (CaO), and 40 per cent coke is heated to 3,630° F. and higher. The reaction is represented by $CaO + 3C = CaC_2 + CO$. The carbide is produced in the melted form, the furnace being tapped for its removal, the liquid flowing into special cars of about 1,000 pounds capacity. The calcium carbide contracts on cooling so it is easily dumped when cool enough to be crushed. This material is graded according to size; the large pieces, about 2-inch, are used in large scale generating tanks, while the very small lumps, pea size, are for use in miners' and hand lamps. The fine powder has special use. The grinding operation is conducted in an atmosphere of nitrogen to avoid the danger of moisture.

When calcium carbide is wet with water acetylene ($C_2H_2$) gas is produced—

$$CaC_2 + 2H_2O = Ca(OH)_2 + C_2H_2$$

The gas when burned produces a very hot flame, estimated to exceed 5,400° F., and with oxygen will produce a temperature of 6,300° F.

The most extensive use of calcium carbide in the refining industry is for the production of gas, so extensively used for welding and cutting metals. The acetylene is sold on a large scale as a compressed gas dissolved in acetane in cylinders. In the year 1929 there were 969,534,000 cubic feet of this gas distributed in the compressed form.

There are several types of gneerators used for making acetylene; the carbide to water type is extensively used. One gallon of water to one pound of carbide is the standard proportion. The generator is so arranged that the lumps fall into the water, the gas and lime water being the products, the action being under automatic control. Each machine is adapted to calcium carbide of a particular size and no change in this respect should be made when operating the apparatus.

An interesting application is in the synthetical preparation of many substances. An example is the conversion of acetylene to acetaldehyde. When adsorbed into a dilute solution of sulphuric acid, and in the presence of mercurous sulphate as a catalyst, it adds a molecule of water to form acetaldehyde

$$C_2H_2 + H_2O = CH_3 + CHO.$$

If hydrogen is added to this, ethyl alcohol is the product.

$$CH_3CHO + H_2 = C_2H_5OH$$

Should the action be the reverse, that is the introduction of oxygen, acetic acid is formed

$$CH_3CHO + O = CH_3COOH.$$

Some calcium carbide is used to melt paraffin from refinery piping and in a similar way in the producing fields for removing wax from wells and gathering systems. This use is based on the fact that when water comes in contact with the carbide heat is produced; about 200 B.t.u. being produced per pound. This is not so powerful as some other methods; the mixture of aluminum and caustic sodium producing 700 B.t.u. per pound.

Properties — Calcium carbide, grayish black lumps to fine powder; formula $CaS_2$; molecular weight 64.07; specific gravity 2.22; melting point 4,172° F.; calcium carbide adsorbes moisture so must be shipped in moisture-proof containers.

Acetylene, a colorless, inflammable poisonous gas with a garlic-like odor. Formula $C_2H_2$, molecular weight 26.01, specific gravity 0.8982 (air = 1) soluble in alcohol, acetone, and water; melting point minus 115° F., boiling point minus 119° F.

Acetylene forms an explosive mixture with air, the dangerous proportions ranging from 3 to 82 per cent acetylene. It is also explosive when under pressure, so it should always be handled in the solution in actone form when stored or shipped in cylinders. One voume of acetone will absorb 25 volumes of acetylene at normal pressure, increasing the same volume for each atmosphere additional pressure applied. The maximum pressure permitted is 250 pounds per square inch.

Price.—Calcium carbide is shipped in various sizes, from 2-inch lumps to fine powder, and in drums of several sizes; the larger sizes are 100 to 220 pounds. The price is close to 6 cents a pound at shipping point.

## Revised Federal Specifications for Kerosene Recently Published

**I am told that the government has issued new specifications for kerosene and would appreciate knowing what they are?—R. S. A.**

The current Federal specification for kerosene is that shown in the Federal Standard Stock Catalog under VV-K-211, September 5, 1933. The detail requirements are:

SPECIFICATION LIMITS

(Kerosene shall comply with the following specifications)

| Test— | Limit | Test number— Federal Specification Board | A.S.T.M. |
|---|---|---|---|
| Buring test, hours (mn.) | 16 | 210.62 | D187-30 |
| Flashpoint, °F. (mn.) | 115 | 110.11 | D56-21 |
| Endpoint, °C. (mx.) | 330 | 100.14 | D86-30 |
| °F. (mx.) | 626 | ..... | ..... |
| Cloudpoint, °F. (mx.) | 5 | 20.14 | D97-33 |
| Flock test | Negative | 130.1 | ..... |
| Sulphur, per cent (mx.) | 0.13 | 520.12 | D90-30T |
| Color, Saybolt number (mn.) | +16 | 10.11 | D156-23T |

mn. = minimum. mx. = maximum.

At the end of the burning test, the flame shall not be smoky and shall be practically as large as when the final adjustment of the wick was made, the chimney shall be clear or only slightly clouded, and no appreciable hard incrustation shall be on the wick.

## Possibilities for Hydrogenating Coal for Motor Fuel

**I am enclosing a news item mentioning the hydrogenation of coal for the production of gasoline in England and I should appreciate having your opinion regarding the possibilities of this process.—C. I.**

The fact that no petroleum is produced in England, requiring all gasoline to be imported, has stimulated efforts to perfect a synthetic method for the preparation of a suitable motor fuel. The outstanding process is that of Bergius who originated about 1913, the hydrogenation method for treating coal to obtain gasoline. British interests, the Imperial Chemical Industries, Ltd., have for some years, been investigating the possibilities of manufacturing motor fuel from bituminous coal by hydrogenation. This research has been assisted by the Fuel Research Board of the Department of Scientific and Industrial Research. An important feature has been the discovery of a catalyst adapted to the material and operation. By use of the ammonium molybdate-charcoal-sulphur catalyst it is possible to obtain a volume of products equal to the original tar derived from the coal. On the basis of the assumed average yield of 20 gallons of tar by the low-temperature carbonization of 1 ton of coal, the products include 14 gallons of a distillate boiling below 446° F., two-thirds of which boils below 338° F. (U. S. Motor Gasoline boils below 437° F.). In addition there is a yield of 6 gallons of high grade Diesel fuel oil. The quantity of hydrogen required for this conversion is 1,250 cubic feet.

Prof. A. W. Nash, University of Birmingham, England, reports in the Journal of the Institution of Petroleum Technologists, 13,681, 1927, experiments with iron oxide catalyst. He obtained from bituminous coal: Oil 44.5 per cent, gas 21, water 7.5, ammonia 0.5, residue 35.1, loss 1.5; total yield 110 per cent. By coking the residue he obtained additional: Oil 8.0, coke 24.0, gas 2.5, loss 0.5. From the total oil there was derived: Gasoline 15 per cent, distillate 20, lubricating oil 6, fuel oil 8, loss 3.5 per cent. The 110 per cent total yield is due to the addition of hydrogen. The process has been extended to the treatment of petroleum oils and residues.

The low cost in the United States for obtaining gasoline from petroleum, which has been below 10 cents a gallon at the refineries for the past 10 years, usually below 5 cents since 1930, and even close to 2 cents during 1933, has not encouraged any serious large scale installations of the hydrogenation process, as applied to coal or petroleum residues. The condition is different in England, where the wholesale price of gasoline at the receiving ports has been approximately 30 cents a gallon. It is this fact that makes any synthetic method that appears feasible for producing motor fuel an attractive proposition to British interests. Should petroleum ever become very expensive and there be a large demand for gasoline and lubricating oil, it would be possible to turn to the vast deposits of coal, known to exist in various parts of the world, for conversion into these products by hydrogenation.

The Oil and Gas Journal has published numerous articles about the hydrogenation process; among these are:

September 4, 1930, page 40.
October 2, 1930, page 218.
October 30, 1930, page 38.
November 27, 1930, page 32.
January 29, 1931, page 34.

## Graf Zeppelin Uses Fuel Made From Natural Gas

**Have you the details covering the nature of the fuel used in the Graf Zeppelin as a source of power? I have the information that liquefied gas is used for cooking and heating but want to know definitely about the power fuel.—L. M.**

It is reported that when the Graf Zeppelin visited the United States last year, it was refueled at Akron with a mixture of Pyrofax (liquefied hydrocarbon gas) and hydrogen in the proportion of 65 per cent Pyrofax and 35 per cent hydrogen, the mixture having a specific gravity of 1.05. When sailing from Germany it appears that a similar fuel is prepared from artificial gas.

The total fuel capacity of the ship is 900,000 cubic feet, about 750,000 cubic feet were taken on at Akron. When loading the Zeppelin the Pyrofax gas was introduced into one end of a pipe system and the hydrogen at the other end, bringing them together at the outlet to the line leading to the ship. Liquefied Pyrofax from the tank car was passed through a steam vaporizer, the steam being provided from a locomotive. The hydrogen was brought in through a manifold connection and thence through a main control valve. To maintain the temperature of the two gases constant and thereby eliminate the necessity for making measurements of temperature, and the allowance in volume, the hot Pyrofax gas was cooled by refrigeration and the hydrogen heated to the required temperature. The essential high degree of accuracy for the measuring of the two gases and the mixing was obtained by the use of orifice meters.

Liquefied gas, stored in special cylinders, is used for cooking purposes.

# FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

**This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.**

**Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.**

**In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.**

## Study of Underground Conditions Should Precede Repressuring

**Would you say that our wells could be produced by the repressuring method with success? The sand is about 1,200 feet deep, and it runs about 85 feet thick. There are two streaks of oil-saturated formation, one near the top of the sand and one near the bottom. Between them are layers of very close sand and sandy shale. There is also a layer of porous but dry sand. I have doubt about the possibility of repressuring under such conditions.—S. R. T.**

You bring in several good points to be considered if repressuring is contemplated. However, you fail to advise whether natural gas or air will be used for this purpose, nor do you mention the kind of power available.

One of the first things to be done is to check the casing to be certain it contains no leaks that might reduce delivery to the formation.

Next the exact position of partings in the formation should be ascertained and provision made to pack off the loose sand streaks and direct the compressed gas into the portion of the sand that contains oil. If the project involves a large lease it is good practice to have the producing formation carefully cored and the cores analyzed to determine porosity, permeability, saturation and other details. This done, some estimate of the recoverable oil can be made and definite plans outlined for the method to be employed.

With present knowledge of underground conditions and the instruments available for making underground studies of formations it is possible to determine in advance of making a major investment whether the project is likely to pay out. Coring the formation is one of the best means of determining underground conditions, but an electrical survey may be made in old wells where the formation cannot now be cored.

The electrical prospecting method described in The Oil and Gas Journal of February 6, 1930, could be used to determine the relative conductivity of strata. Information obtained by this method could be corrected by determining conductivity of known formations in the cored holes.

This may sound like a very technical procedure to decide whether a lease could be repressured economically. All engineers are not in accord as to the economical aspect of repressuring formations with air or gas and, as doubt has been expressed by engineers recognized as careful investigators it might be best to proceed along other lines before installing compressor equipment and running service lines to and from the wells.

Wells considered for repressuring are usually in the class such as you suggest so far as depth is concerned. It does not cost much to drill holes 1,200 feet deep and there are several methods now available for getting cores for either rotary or cable tool holes. These cores properly taken and studied will give the needed general information as to remaining oil in the formation and the relative position and thickness of strata.

Where streaks of impervious material lie above and below the soft sand stratum it is possible to set packer and shut off the soft and porous streak and prevent the compressed gas from by-passing through it and therefore not doing any work.

Likewise, the gas can be directed into the particular strata that contain oil in sufficient quantity to justify repressuring. Under such a system the quantity of gas compressed and forced into the hole will be held at a minimum and the highest efficiency of operation will be attained.

You state that the formation on your lease is 85 feet thick. It is hardly reasonable to expect that all of this stratum is saturated with sufficient oil to make it profitable to repressure it. There may be one or two good pay streaks in this mass, however, that will pay well if the compressed air or gas is directed into them only. To do this a definite knowledge of the stratigraphy of the entire formation at both input and outlet wells must be obtained. By application of methods now developed and proven this information can be obtained and the hazards of the undertaking reduced to a minimum.

## Pits in Underground Pipe Lines and Ways of Repairing Them

**What method of dealing with corroded spots in old buried pipe lines is regarded by engineers as the most efficient? Just what process of corrosion or rusting creates them? Does it occur anywhere and everywhere or only where certain conditions exist, such I suppose, as strongly acid soils?—D. H. G.**

The following answer to your question is provided by W. G. Heltzel, general superintendent of the Stanolind Pipe Line Co.:

"If a piece of unprotected steel is buried in the ground it will deteriorate, and if there are any corrosive elements, such as cinders, in the soil, an accelerated deterioration will occur. The same thing happens in the steel of a pipe line except that instead of the surface wasting evenly over its whole surface, the corrosion usually concentrates itself in small areas which results in pits which in time become sufficiently deep to penetrate through the wall of the pipe and an oil leak occurs. Fortunately, many of the holes at the base of the pit are not large, however, the oil loss and damage resulting from a single pit is appreciable. Corrosion ranks first, not only in cost, but also in the time required to maintain lines.

"When a failure occurs in the pipe line as a result of corrosion, which means a pit through the pipe, it is found by the line walker who covers the line on a regular schedule, by a drop in pressure at the pumping station or by the volume of oil checking short at the next receiving station. There are occasions when the leak on the line is rather small and consequently a drop in pressure will not result, and it cannot be found in the volume of oil, but over a period of time an appreciable amount of oil can be lost. Only the line walker can find such leaks.

"Until recently, perhaps in the last four years, it was customary to repair such leaks by putting on a heavy cast iron saddle with a gasket over the pit in the pipe; and if the pipe was badly deteriorated it was the usual practice to cut the pipe out of the line in due time. A temporary repair was always made of course with the saddle clamp until such a time as the line could be prepared for draining and replacement of the pipe.

"In more recent years the practice of repairing corroded pipe pits has changed, and the usual procedure for the repairing of a small pit is to drive a wooden plug in it to prevent the leakage of oil, and then to place over it a small steel patch clamped to the pipe with a gasket between the pipe and the clamp. Such a patch can be installed by one man. This is considered also a temporary job but in due time the patch is electrically welded to the line, provided the pipe surface surrounding the pit will permit welding and the pipe itself will not have to be replaced.

"There are many unexplained causes for the corrosion of underground steel oil trunk lines, because there are so many factors involved but practical pipe line men recognize some of the following general causes: (a) Various types and degrees of subsurface soil corrosion. (b) Stray electrical currents. (c) Miscellaneous conditions on the pipe line right of way along its route. (d) Oil leaks."

## Why Was It Called That?

### CORE-CATCHER

The core-catcher is one of the seven principal parts which constitute a core-barrel, and it is so called because its function is to catch and hold the core after it has been taken into the barrel. The core-catcher usually is a metal ring whose inside diameter is slightly larger than that of the core to be obtained and equipped with fingers of spring steel several inches long. These fingers, attached to the inside of the ring, point upward and slightly inward. When a core is pushed up into the barrel the fingers spread apart slightly, but continue to exert a pressure so that their tips stick into the core and keep it from dropping out when the barrel is being raised to the surface.

## Not the Safest Chemical for Use in Removing Paraffin Deposit

**I understand that sodium peroxide is being used in some fields to remove accumulations of paraffin from wells. If this is true, I would be glad to know what kind of results these operators are getting. Also I would like to know just how to use this substance and whether it is used alone or mixed with other material. —S. E. M.**

Before answering your specific problem may we suggest that you send 55 cents to the Superintendent of Documents, Washington, D. C., for a copy of Bulletin 348, U. S. Bureau of Mines, entitled "Paraffin and Congealing-Oil Problems," by C. E. Reistle, Jr.? It is one of the best publications on this subject now available to the oil man and worthy of a place in every oil man's library.

In this bulletin under the subhead "Chemicals," Mr. Reistle describes briefly the use of aluminum powder and a caustic such as lye to generate heat in a well. He also states that R. Van A. Mills suggests the use of calcium carbide and water as a means of generating heat. The reaction of calcium carbide and water generates approximately 200 British thermal units of heat per pound, and it is therefore much less efficient than the reaction of aluminum and lye and iron oxide and aluminum compounds; moreover, the cost of materials is much greater. Mr. Mills also suggests the use of sodium peroxide, which reacts violently upon the addition of water and generates considerable heat with the liberation of oxygen. If sodium peroxide were used with aluminum it would in all probability produce more heat than any of the chemical reactions mentioned, but sodium peroxide is difficult to store without deterioration and is very dangerous to handle.

"Sodium peroxide," says Mr. Reistle, "also generates heat and liberates oxygen, and it bursts into flame when brought in contact with water or damp objects and therefore constitutes a great fire hazard. The use of strong acids and acids with other chemicals is not advisable, because they damage the metal equipment of the well and affect the producing sand adversely."

From the foregoing it is apparent that sodium peroxide is not the safest chemical to use for removing paraffin from a well and it is believed that if you get a copy of Mr. Reistle's book on this subject you will be well paid. There are several chemical companies that manufacture paraffin solvents that are safe to use and quite efficient in operation. You will find some of them advertised in The Oil and Gas Journal.

# NATURAL GAS DEVELOPMENTS

## Repressuring Successful in Panhandle Gas Field

AMARILLO, Tex., July 2. — A successful experiment proving the practicability of returning natural gas into the ground in the Panhandle fields as a means of conserving billions of feet of gas now being blown into the air daily was made public here in a statement by Frank L. Chase, vice president and operating manager of the Lone Star Gas Co.

More than 100,000,000 feet of gas were returned to the gas-bearing horizon of an experiment injection well in Wheeler County in six days, without using mechanical compression, according to Mr. Chase. Gas was taken from wells with 354 pounds pressure and injected into a well gauging 48 pounds lower pressure. J. H. Dunn, production engineer for the Lone Star Gas Co., supervised the experiment early in June and calculated that at 500 pounds working pressure, mechanical compression would return 60,000,000 feet into the experiment well, Mr. Chase said.

Engineering data obtained during the test disclosed that the Panhandle formation will readily accept residue gas from gasoline stripping plants which are now wasting billions of feet into the air after recovering only 3 per cent of the heating value, according to Mr. Chase. Stripping of gasoline from gas wells and popping the residue into the air is permitted under the "sour gas" law.

Additional experiments in co-operation with Railroad Commission and Federal Bureau of Mines engineers are being planned. All data will be made available to the State Senate Gas Wastage Investigating Committee which probed alleged dissipation during a hearing in Amarillo last April.

## Philadelphia Company Completes Half Century

PITTSBURGH, Pa., July 2. — One of the oldest public utility corporations of the holding company type has just celebrated 50 years of existence in Pittsburgh. This corporation, oddly enough, is known as the Philadelphia Co., although it has nothing to do with the city of that name. Pittsburgh is unique among the metropolitan centers in the grouping of four distinct kinds of service—electricity, street railways and buses, steam heating and about half of the natural gas supply under one parent company and under one single management. Equitable Gas, and Pittsburgh & West Virginia Gas, are the gas subsidiaries.

The first president of the company was Withrop Smith, who served only two months, but he was followed by George Westinghouse, who served from 1884 to 1897. Then came James H. Reed, father of the present U. S. Senator, David A. Reed, who served until 1919. He was followed by A. W. Thompson, who completed his term of office in 1926. A. W. Robertson, now chairman of the board of directors of the Westinghouse Electric & Manufacturing Co., followed until 1929, and was succeeded by John J. O'Brien, president of Standard Gas & Electric Co. Frank R. Phillips, the incumbent, took office in 1931, following a long career in many branches of public utility operation.

The late Col. H. M. Byllesby, founder of the company which bears his name and of Standard Gas & Electric Co., was born in Pittsburgh, the son of a Pittsburgh clergyman, received the greater part of his education here, and at the age of 26 became a vice president of the Westinghouse Electric & Manufacturing Co. The affiliation in 1926 of the Philadelphia Co. group with Standard Gas & Electric Co., whose subsidiary and affiliated companies are supervised by Byllesby Engineering & Management Corp., renewed an association dating back many years.

## New Rates for Muskegon Approved by Commission

MUSKEGON, Mich., July 2.—Proposed new Muskegon rates are said to be the lowest in Michigan outside of Detroit where large consumption enables the distributing company to offer lower rates. The schedule approved by the State Public Utilities Commission will effect a reduction of 15 to 37 per cent below present artificial gas rates in Muskegon and Muskegon Heights, where the Muskegon Gas Co. now has about 12,000 customers. The proposed new natural gas rates are virtually the same as those in effect here from 1928 to 1930 when natural gas from the Muskegon oil field was distributed until the reserves were depleted by blowing millions of feet into the air and selling 15,000,000 to 18,000,000 feet a day for boiler purposes in industries.

The new Muskegon rates will start with a minimum monthly bill of 80 cents and a base rate of 80 cents for the first 300 feet. The domestic schedule continues as follows: Next 1,700 feet, $1.25 per 1,000 feet; next 3,000 feet, $1.30 per 1,000 feet; next 5,000 feet, $1.20 per 1,000 feet; next 10,000 feet, $1.10 per 1,000 feet; next 30,000 feet, $1 per 1,000 feet and all over 50,000 feet, 75 cents per 1,000 feet.

Industrial rates begin with 50,000 feet a month minimum at $50 a month and include: Next 50,000 feet, 50 cents per 1,000 feet; next 100,000 feet, 40 cents per 1,000 feet, and all over 200,000 feet, 35 cents per 1,000 feet. Yearly contracts are required.

General heating rates, under which it is estimated the average home may be heated for $95 a year, begin with $3.27 a month minimum bill for the first 2,000 feet and all over 2,000 feet at 50 cents per 1,000 feet. An optional rate for heating large buildings with a minimum of 100,000 feet a month for eight months starts with $35 a month under a rate of 35 cents per 1,000 feet for all gas used.

### NEW CISCO FRANCHISE

CISCO, Tex., July 2. — Hickok Oil Corp. of Toledo, Ohio, which owns producing oil and gas leases and a casinghead gasoline plant near Eastland, Tex., has secured the gas franchise for the city of Cisco for a 60 cents per thousand-foot rate, 7½ cents per thousand feet under the present rate. It is planning to build a gas line from its properties and plant near Eastland to connect with Cisco.

### SOUTHWEST GAS UTILITIES

WILMINGTON, Del., July 2.—Pledged assets of the Southwest Gas Utilities Corp. were sold at public sale for $660,000 to the corporation's bondholders protective committee. Assets consisted of securities pledged with the Manufacturers Trust Co. under trust indenture of May 1, 1928, to secure an issue of first lien and secured sinking fund bonds.

### HELIUM COMPANY PLANTS

The Helium Co., Inc., Louisville, Ky., takes exception to a statement that control of the Dexter, Kans., plant passed to the Goodyear Co., and says there are only two commercial helium production plants in the world; one at Dexter, Kans., and the other at Thatcher, Colo., and both belong to the Helium Co., Inc.

## Mines Bureau Acquires Helium Reserve Right

The acquirement of all gas rights in 50,000 acres comprising the Cliffside helium-bearing gas field, near Amarillo, Tex., has been completed by the U. S. Bureau of Mines, Department of the Interior. This field supplies the raw material from which all helium used by the nation's military services is extracted in the Amarillo helium plant, designed, built and operated by the Bureau of Mines. In addition to supplying current requirements, the field provides a large reserve for future lighter-than-air craft operations of the Army and Navy.

When production and conservation of helium for governmental use was delegated by Congress to the Bureau of Mines in 1925, the old supply was failing and extraction costs were high. From the World War period, when members of its staff suggested production of helium for aeronautical use to the Army and Navy and directed experimental work to develop processes for its extraction, the Bureau of Mines has continued its studies of helium. Through these studies the area now known as the Cliffside Field was found to contain gas of about 1¾ per cent helium content.

With the responsibility of providing helium placed upon it by the Congress, the Bureau of Mines made a thorough study of the Cliffside Field and considering all factors, determined that this field was the best reserve of helium-bearing gas then known. No comparable field has ever been discovered.

In 1927, the bureau contracted for leasehold gas rights in 20,000 acres as the initial step toward control of all gas rights in the closed geologic structure comprising the field. This contract was followed by a series of large purchases of both leasehold and lessor's retained rights. The last transaction covering about 9,000 acres, has just been completed, giving to the Government all of the gas lease and gas royalty rights within this large helium reserve.

After the source of supply of raw material was selected, the bureau designed a helium plant of a new type and started its erection at Soncy, 7 miles west of Amarillo, in August, 1928. The bureau also provided for the drilling of wells in the Cliffside Field and construction of necessary pipe lines to bring the gas from the field to the plant.

Production of helium at the Amarillo plant was started in April, 1929. In five years of operation, this plant has produced more than 57,000,000 feet of helium, or about one-half of all of that element ever recovered in the world. Operating costs have been less than one-third of the lowest cost at which helium was ever obtained by the Government from any other source.

The Government's investment in helium plant, gas lands, wells, and pipe lines near Amarillo is about $2,100,000. Expenditures in operation over the five-year period have been $666,600, and $159,000 has been returned to the Treasury of the United States from sale of residue gas. Thus the net operating cost of producing 57,487,000 feet of helium has been only $507,624, or $8.83 per 1,000 feet.

The lowest average cost over a year's period at which helium was ever obtained by the Government from any other source was about $34 per 1,000 feet. At that rate the 57,487,000 feet that has been produced by the Amarillo plant would have cost $1,954,558. The difference between that amount and the net operating cost at Amarillo is $1,447,134, or 71 per cent of the total investment.

The rock pressures of the wells indicate a depletion of the gas reserve to date of only about 2 per cent. The reasonable expectation is, therefore, that the entire investment will be returned at a time when the properties have served for only a very small percentage of their total useful life.

## Many Wells Are Drilling in Hebron Gas District

COUDERSPORT, Pa., July 2.—The Lycoming Producing Co.'s Ernest Meister well, east of the Penn United's 14,000,000-foot producer, is expected to be the next good producer in the Hebron gas field. The Onandaga lime was encountered at 5,305 feet and 5,329 feet have been cased above the cap rock overlaying the Oriskany.

Another well expected to be completed soon is the William Hillegas, shut down at 5,249 feet while casing is being run and cemented. This well reached the Onandaga at 5,130 feet.

Hungiville Oil & Gas Co.'s No. 3 Sam Booth, Hebron Township, is drilling at 550 feet. North Branch Development Co., Doty, Hector Township, Sabinsville anticline, is at 4,750 feet. United Producing Co., Wilsey, Hebron Township, is at 1,465 feet. North Branch Development Co., Stella Herron, Hebron Township, drilling at 4,150 feet. Bayless Natural Gas Co., No. 1 Estes, at 375 feet; No. 2, at 150 feet. Both are in Hebron Township.

United Producing Co., Currier, is drilling at 620 feet. Lycoming Producing Co., W. B. Bennett, Ulysses Township, on the Harrison anticline, drilling at 4,105 feet. Hanley & Bird, Hebron Township, is cleaning out.

Allegany Gas Co., Penn Stave, Hebron Township, is drilling at 970 feet. Empire Gas & Fuel Co., New York State lands, Greenwood Township, Steuben County, is drilling at 2,370 feet. Allegany Gas Co., Zerbe, Liberty Township, McKean County, on Smethport anticline, is drilling at 4,796 feet. Sinclair Refining Co., Josephine Ryan, Willing Township, Allegany County, is drilling at 3,175 feet. Kerr, Kauffamn and Higgins, Bank of Angelica, Allen Township, is at 500 feet. First National Bank of Emporium, Nos. 1 and 2, and Barker and Britton's Russell well are shut down.

## Emporia Speculating on RFC Loan for Gas Plant

EMPORIA, Kans., July 2.—The possibility of a government loan to build a pipe line and a gas distribution system, will be investigated by Emporia's city commission before deciding whether a proposed gas franchise, submitted by the Kansas Electric Power Co. is submitted to the people for vote.

The Kansas Electric Power Co. has been seling gas in Emporia without a franchise, the old one having expired several years ago. The power company pays the Cities Service 40 cents per 1,000 feet at the city gate, and the power company charges consumers at a rate of $1 for the first 1,000 feet up to $25.55 for 40,000 feet.

The power company says it can, by signing a contract for a definite number of years, get a reduction to 30 cents at the gate from the Cities Service. The power company, if the city will grant a franchise, offers to retail gas at from $1 for the first 1,000 feet up to $19,75 for 40,000 feet. The rate varies, the reduction being more if more gas is consumed. City officials say the proposed reductions are not enough, and will determine if it is possible for Emporia to get a loan to build its own gas system.

# PERSONAL PARAGRAPHS

WILLIAM C. STRAND, of St. Louis, Mo., representing the Scully Steel Products Company, was in Tulsa on business last week.

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JACOB GREENSPON, of the Joseph Greenspon's Son Pipe Company, St. Louis, Mo., was a Tulsa visitor recently.

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THOMAS W. PETTUS, representing the More-Jones Brass & Metal Company division of the National Bearing Metals Corporation, St. Louis, Mo., was a recent Tulsa visitor.

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JACK LLOYD, formerly of the East Texas fields, who recently spent some time in Central Michigan, has gone to the Cut Bank Field in Montana.

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B. C. McMULLIN, district manager of Arkansas, Louisiana, North Texas, West Texas, and Hobbs, New Mexico, for the Republic Supply Company, is being transferred from Kilgore to Fort Worth, Tex.

* * *

BILL COLLYNS, with the Humble Oil & Refining Company, McCamey, Tex., has been named president of the Lions Club of that city. He is also president of the Permian Basin Ball League.

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E. H. SALRIN, vice president of Tide Water Oil Company, Houston, Tex., is in New York on business.

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H. A. DENNIS, scout for the Texas Company, has been transferred from Shreveport to Lake Charles, La.

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J. A. CUMMINS, district manager, Dowell Incorporated, Tulsa, is taking a well-earned vacation, fishing in the Michigan lakes.

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AMISS OWENS, formerly in the land department of Stanolind Oil & Gas Company at Tulsa, has been temporarily transferred to the Houston, Tex., office as chief clerk.

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D. B. HARRIS, former division superintendent for Humble Oil & Refining Company at San Antonio, Tex., has been transferred to Houston, Tex., as head of the industrial relations department.

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FIRST LIEUT. THOMAS A. MILLER, of the Officers Reserve Corps, with the Pure Oil Company, Fort Worth, Tex., has been assigned to C.M.T.C. training at Fort Sam Houston for two weeks, beginning July.

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E. M. STOLL and E. H. SCHROEDER have organized the Dixie Minerals Company, Fort Worth, Tex. Mr. Schroeder was formerly with the Southern Crude Oil Purchasing Company.

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WILLIAM HALLIDAY, of Merlin, Ontario, is in St. Josephs Hospital at Chatham, Ontario, recovering from injuries to his left leg sustained while working on a drilling rig for the Olga Oil & Gas Company.

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CARL W. VOGT, Houston, Tex., representative of the Shaffer Tool Works Company, Los Angeles, Calif., is in California on a several weeks' trip. ED CANAVAN, service representative of the company at the Los Angeles headquarters, is located temporarily at Bosco, Acadia Parish, Louisiana, where a new field is being developed.

A. S. BAILEY, vice president of the Texas Pipe Line Company, Houston, Tex., has just returned from an inspection tour of Central and North Texas.

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ED DOYLE, chief clerk in the Tulsa proration umpire's office, is visiting in Oklahoma City, Okla., while the office here is closed over the week-end, and during the election and the Fourth.

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T. F. CALDWELL, sales manager of the Roosevelt refinery, Mount Pleasant, Mich., has brought his wife home from a Saginaw hospital where she had been confined by illness for some time. Her condition is much improved.

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E. A. LIDDERDALE, formerly of the Cut Bank and Sunburst Fields, Montana, has succeeded MR. LEWIS as Central Michigan representative of Spang & Company, Butler, Pa. Mr. Lewis has returned to the general offices in Butler.

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R. F. FIKE, superintendent of motor transportation for the Mid-Continent Petroleum Corporation, has been away from his office in Tulsa for the past three weeks upon an inspection trip of the company's marketing service stations in 13 states in the Middle West.

L. L. RECTOR, of Fort Worth, Tex., of the Rector Well Equipment Company, called on oil company buyers in Tulsa recently.

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E. E. DILLMAN, engineer, Wyatt Metal & Boiler Works, Dallas, Tex., was a business visitor in Tulsa last week.

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W. H. DWYER, president, Steel Tank Construction Company, Dallas, Tex., called on the trade in Tulsa and vicinity the first of last week.

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R. G. MARTIN, purchasing agent, Deep Rock Oil Corporation, has returned from a vacation and fishing trip spent in Minnesota on the lakes.

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R. C. BARTHOLD, with the Iron Mountain Oil Company, Fort Worth, Tex., is spending his vacation at his old home in Lima, Ohio. His mother is to return with him to Fort Worth.

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DR. H. T. MANN, professor of petroleum in the Massachusetts Institute of Technology at Boston, Mass., is visiting H. SMITH (HANK) CLARK, division geologist for the Sinclair Prairie Oil Company, Fort Worth, Tex.

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B. E. HULL, president of the Texas Pipe Line Company at Houston, Tex., has returned from a trip to Tulsa.

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A. B. CROSS, investigator for the Railroad Commission at Kilgore, Tex., has resigned to take a position with the Texas Petroleum Council.

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FRANK SEVERNS, assistant superintendent of the Superior Oil Company at Bosco, La., has returned from a vacation trip to Ohio, where he formerly made his home.

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EARL A. TRAGER, of the National Park Service, was in Tulsa visiting friends. While there he presented a 45-minute program on the national parks, using natural color cinema.

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R. C. BARBOUR, assistant division superintendent of the East Texas division for Humble Oil & Refining Company, has been transferred to West Texas as division superintendent with headquarters at McCamey, Tex.

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R. O. FRAME, with Humble Oil & Refining Company, has been transferred from the land department to the position of assistant division superintendent, San Antonio division, with headquarters at San Antonio, Tex.

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WILLIAM F. LOWE, secretary-treasurer, National Gasoline Association of America, returned to his office in Tulsa last week from Washington, D. C., where he has been for the past two weeks.

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CHARLES B. SWANNER, of Dallas, Tex., safety department representative of the Magnolia Petroleum Company, was in Lake Charles, La., during the past week, conducting meetings of the firm's oil field employes.

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HARRY H. HILL, co-ordinator of engineering, Standard Oil Company of New Jersey, has returned to his office, Rockefeller Plaza, New York City, after two weeks spent with the Carter Oil Company officials in Tulsa.

## DO YOU REMEMBER?

From The Oil and Gas Journal Files

### 25 Years Ago

July 5, 1909

William J. Reed and Joseph Taff, of the U. S. Geological Survey, are in the Oklahoma fields on professional work.

Pipe has been shipped to Texas for the Lone Star gas line from Petrolia to Dallas and Fort Worth. It will be a 16-inch line.

Maj. John W. Otley, noted geologist, has arrived in Houston from Tampico, Mexico. He will go to his home in Waynesboro, Va.

Capt. G. W. O'Brien, Beaumont pioneer and one of the early operators in Spindletop, died on June 30. He owned part of the land on which the Spindletop Field was drilled.

### 20 Years Ago

July 2, 1914

A. J. Hazlett gives up his journalistic career to go with the Atlantic Petroleum Co., in St. Louis, Mo.

The rumor persists that the Royal Dutch-Shell interests will lay a pipe line from the Cushing Field in Oklahoma to a Gulf of Mexico port. The company is said to be soliciting for oil to learn if it can get a sufficient supply to make the line feasible.

The Quapaw-Wichita Gas Co. has a mystery well in Section 21-28-4, Augusta area, Butler County, Kansas, which was drilled for gas but which is said to be good for from 50 bbls. of oil upward. It may mean the opening of Butler County as an oil region.

Arthur G. Dana, Sedan, Kans., oil man, accompanied by his wife, has sailed for Constantinople, from whence he will go to the Holy Lands, on an important mission for the Standard Oil Co. of New Jersey, which has large holdings around Joppa. Mr. Dana will have charge of the company's property.

Frank Algeo, of Bartlesville, Okla., is being sent to Peru, South America, by the Standard Oil Co. of New Jersey.

### 10 Years Ago

July 3, 1924

The American Petroleum Institute, urged by outside associations to do so, has agreed to assume direction of the campaign to tell the public the facts about the oil industry.

Two-fifths of the acreage of Logan County, Oklahoma, has been leased for oil and gas. No well has been drilled below 4,000 feet in the county and it is believed production may be found at greater depth.

H. C. George, geologist and metallurgical engineer, has been appointed to organize and direct the pioneer school for training oil field engineers by the regents of Oklahoma University.

F. P. (Jack) Rushmore has been promoted to the position of district manager for the Gypsy Oil Co. in the Rocky Mountain region with headquarters in Denver, Colo.

Barnsdall Oil Co. brings in a 50 gravity oil well in Section 32-21-12, Osage County, Oklahoma. It started at 200 bbls. per hour.

Frank T. Whitehill, 61 years active in the oil business, dies in Corsicana, Tex. He had been with the Magnolia Petroleum Co. 21 years.

ROBERT W. DIERKER, assistant to the vice president, Gary Screw & Bolt Company, Chicago, called on the oil trade in Tulsa during the month.

• • •

L. V. STANFORD, vice president of the Sinclair Refining Company, in charge of exports, returned to the New York City offices of the company last week from a several weeks' visit to European points.

• • •

WIRT FRANKLIN, president, Independent Petroleum Association of America and of the Wirt Franklin Oil Corporation, has recovered from his recent illness and returned to his duties. He was in Tulsa last Friday and left for Washington, D. C.

• • •

JACK RANKIN, petroleum engineer for the Sinclair Prairie Oil Company, has been transferred back to Fort Worth, Tex., from Eastland, Tex., where he has had headquarters for several months. He was formerly stationed at the Fort Worth offices.

• • •

D. N. HILL, formerly with the Skelly Oil Company land department and later manager of crude oil purchases for the pipe line division in Kansas, has been named to succeed J. P. CUSACK, formerly manager of the Kansas division of land and leasing with headquarters at Wichita, Kans.

• • •

C. O. SHUMAKER, representing Charles E. Hough Manufacturing Company, Franklin, Pa., in Oklahoma and Kansas, has moved into a new warehouse at Cameron and North Boston Streets, Tulsa. L. L. REID recently moved to Tulsa from Franklin, Pa., to take charge of the warehouse stock.

• • •

N. V. VANNIKOFF, representing the Soviet Union oil industry, who has made his headquarters in the United States for the past several years, left New York, July 3 for Russia. The work of his department hereafter will be in charge of I. POLIAKOFF, A. SHACHNAZAROFF, and N. TITKOFF, with offices in the H. W. Hellman Building, Los Angeles, Calif.

• • •

NEIL BUCKLEY, of the Cities Service Export Oil Company, Tulsa, was out of his office for a few days in the past week because of illness.

• • •

ROBERT McCOY, JR., sales manager for Frick-Reid Supply Corporation, Tulsa, has been spending the past week in Texas on company business.

• • •

CAPT. J. F. LUCEY, Dallas, Tex., has just returned from a several months' stay in New York, Washington and other eastern and northern cities.

• • •

HUGH MATIER, of the Union Oil Company, who has been doing special work in the Pacific Northwest, including British Columbia, has returned to the home office at Los Angeles, Calif.

• • •

H. Y. SMITH, assistant to FRANK DAVIS in the gas department of the Shell Oil Company of California, has taken the latter's post following his recent promotion as chief in charge of oil and gas accounting in southern California.

• • •

GEORGE HOPKINS, of the U. S. Bureau of Mines, spent a week in Los Angeles, Calif., in consultation with E. T. KNUDSEN, of the San Francisco office of the bureau and the California Proration Committee but has subsequently returned to Washington, D. C.

• • •

WILLIAM C. VAN FLEET is one of the busiest men in southern California right now as he is charged with the responsibility of supervising operation of the Pacific Coast Petroleum Agency which has been organized in conformity with provisions of the California marketing agreement recently approved by the petroleum administrator.

FLOYD SCOTT, independent operator and secretary of the Marley Production Company, Fort Worth, Tex., spent several days in Houston, Tex., on business.

• • •

CECIL HAGAN, formerly chief geologist and land man with the Feltex Oil Company, Houston, Tex., has become associated with the South Coast Oil Company as chief geologist.

• • •

HARRY DODGE, from the Standard Shipping Company, stopped in Washington, D. C., for a few hours on his way back to New York from a business trip to Houston, Tex., and New Orleans, La.

• • •

HARRY MILES, in charge of the engineering department of the Texas Railroad Commission at Kilgore, has been placed in charge of the combined engineering and conservation departments. JACK WILLIFORD will be his assistant in handling conservation work.

• • •

D. J. GRIBBON, production superintendent of the Texas Company, Panhandle district; EARL STRATTON, head of the land and scouting department; ARTHUR HOLLAN, petroleum engineer, and DOC SCHWARTZ, geologist, have moved the office from Kings Mill to Pampa, Tex.

• • •

W. W. REW was honored at a luncheon upon his retirement as general district manager of the Magnolia Petroleum Company, Dallas, Tex. FRED M. LEGE, JR., vice president and director of sales promotion; E. E. PLUMLY, of Beaumont, vice president and manager of refineries; E. P. ANGUS, vice president and manager of sales, and RALPH KINSLOE, vice president and general manager of the company, spoke briefly for some 40 associates gathered for the occasion. Mr. Rew joined the Magnolia when the company was organized in 1911, having formerly been in the employ of the Waters-Pierce Oil Company, at St. Louis, Mo., when he was but 15. He has been associated with the oil industry in the Southwest for 51 years. Since February, 1934, he has been general district manager at Dallas.

H. W. CARDWELL, president of the Allsteel Products Manufacturing Company, Wichita, Kans., was a Tulsa visitor last week.

• • •

REX G. HAMAKER, vice president of Reed Roller Bit Company, Houston, Tex., has left with his family for a visit in California.

• • •

E. W. BARR, deputy supervisor for the Texas Railroad Commission, with headquarters at Kilgore, has resigned to go into business for himself.

• • •

L. L. CORYELL, president of Coryell & Son, Lincoln, Neb., prominent jobber of the Middle West, accompanied by MRS. CORYELL, left New York, Saturday, on the Reliance of the Hamburg-American line on a cruise to the North Cape. The cruise ends on August 4 at Hamburg, Germany.

• • •

W. S. (BUCK) MORRIS, valuation engineer, Indian Territory Illuminating Oil Company, Oklahoma City, Okla., has returned from a two-week vacation spent at Wilmington, N. C., his old home town. He reports having spent his time visiting the plant of Dow Chemical Company treating sea water for bromine, and fishing in the sea.

• • •

D. O. JOHNSON, Pittsburgh, Pa., has been appointed district representative for the A. M. Byers Company, Pittsburgh, Pa., for Oklahoma, Arkansas and southern Kansas, and will make his headquarters in Tulsa. Mr. Johnson was with the engineering department of Westinghouse Electric Company before going into the engineering service department of the A. M. Byers Company in Pittsburgh.

• • •

W. T. WELLS, of Lane-Wells Gun Perforator Service, Los Angeles, Calif., was a business visitor in Houston, Tex., recently, arriving at Galveston, Tex., by steamship from New York, where he spent two weeks considering ways and means of providing his company's services in foreign fields. Mr. Wells spent a week in Houston conferring with officials of the Texas Iron Works, licensed operators of his perforating service in Texas.

• • •

R. B. LAUGHLIN, secretary-treasurer of the Texas Pipe Line Company, Houston, Tex., has returned from a six weeks' trip to New York.

• • •

JACK LOFFLAND, member of the drilling contracting firm of Loffland Brothers, has returned from a business trip to New York.

• • •

T. M. JONES, representative for the Darling Valve & Manufacturing Company, Williamsport, Pa., is on special assignment in the Mid-Continent and Texas for his company. MRS. JONES is seeing the West with him

• • •

R. P. HUGGINS, president of the Los Angeles Petroleum Accountants Society, discussed the recent wage order issued by SECRETARY OF THE INTERIOR ICKES at the monthly meeting of the society at which time the new Federal production tax also came up for discussion.

• • •

R. B. WHITEHEAD, chief geologist of the Atlantic Oil Producing Company, and RUSSELL S. McFARLAND, of the Texas Seaboard Oil Company, are members of a subcommittee of the Dallas Wildcat Committee, seeking quarters for the new Dallas Petroleum Club. HERBERT CARPENTER, of the Bureau of Mines, is in charge of membership.

• • •

JOHN H. LANGSTON, well known chief scout of the Sun Oil Company, Dallas, Tex., and past president of the National Oil Scouts Association, is undergoing treatment for an old trouble that has recently caused a relapse. C. C. POPE, combination scout and land man for the company, San Angelo, Tex., is filling the vacancy in the Dallas office until Mr. Langston gets back.

## They Say He's Stepping on the Gas

It is said of F. L. Carmichall that he is "stepping on the gas" with the Lone Star Gas System, for in nine years he has come up from the engineering department of the Dallas Gas Company, a subsidiary of the Lone Star, to general superintendent of the Community Natural Gas Company, as division manager in Fort Worth, Tex.

F. L. CARMICHALL

Mr. Carmichall was born and reared in Hill County, Texas, attending high school in Hillsboro and then Trinity University in Waxahachie, where he received his A.B. degree. However, before going to Trinity University he joined the army and was sent to the officers' training camp at McArthur in 1918, from which place he was discharged.

After getting his degree at Trinity Mr. Carmichall attended Purdue University in 1922, taking civil engineering for a year at that school. His first position in the business world was taken with the Graver Corporation of East Chicago, Ind. He worked for this company until January, 1925, when he returned to Texas and joined the Dallas Gas Company staff. The following year he was transferred to the engineering department of the Community Natural Gas Company, and during the next two years of rapid company expansion was active in the construction of many of the company's 250 town plants.

Mr. Carmichall was appointed general superintendent of the Community Natural January 1, 1928, serving in that capacity until his recent promotion and transfer to Fort Worth. He married a Texas girl and they have a son. Mr. Carmichall is a member of the Fort Worth Club, Fort Worth Rotary Club and the Knights of the Round Table.

# MARKET RECORD OF OIL SECURITIES

## Active Oil Stocks Listed on New York Stock Exchange

**Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange**

| 1934 High | 1934 Low | Week ended June 30 Sales | High | Low | Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | 1933 High | 1933 Low | 1932 High | 1932 Low | 1931 High | 1931 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55⅝ | 41½ | 2,300 | 50½ | 49⅞ | 50½ | Amerada Corp. | 774,875 | N.P. | 50cQ | 7-31-34 | 47⅝ | 18½ | 22¾ | 12 | 23 | 11¼ |
| 35¼ | 21¾ | 5,100 | 25¾ | 24⅝ | 24⅞ | Atlantic Refining | 2,665,234 | $25 | 25cQ | 6-15-34 | 32½ | 12⅝ | 21⅞ | 8⅝ | 23⅝ | 8⅝ |
| 10 | 7 | 7,300 | 7⅝ | 7⅛ | 7⅜ | Barnsdall Corp. | 2,248,795 | $5 | .... | 5-11-31 | 11 | 3 | 7 | 3⅜ | 14½ | 4 |
| 19¼ | 11⅛ | 20,000 | 14⅜ | 13½ | 13⅜ | Columbia Gas & Elec. | 11,610,036 | N.P. | 12½cQ† | 5-15-34 | 28⅛ | 9 | 21 | 4¼ | 45⅝ | 11⅝ |
| 14¼ | 9½ | 19,200 | 10½ | 10 | 10⅛ | Consolidated Oil Corp. | 14,218,835 | N.P. | 28c | 4- 7-34 | 15¾ | 5 | 9 | 4 | 15⅞ | 4¼ |
| 22¾ | 16½ | 19,000 | 19¾ | 18⅞ | 19 | Continental Oil of Delaware | 4,738,593 | $5 | 25c | 4-30-34 | 19⅝ | 4⅞ | 9⅜ | 3⅝ | 12 | 5 |
| 22¼ | 15⅛ | 1,000 | 19¼ | 18⅛ | 18½ | General Asphalt | 387,149 | $10 | .... | 6-15-32 | 27 | 4⅝ | 15½ | 4¾ | 47 | 9⅝ |
| 5⅜ | 3¼ | 1,500 | 4 | 3⅝ | 3⅝ | Houston Oil (new) | 1,098,618 | $25 | .... | 10-17-30 | 7⅜ | 1⅞ | 5⅜ | 1⅛ | 14⅛ | 3 |
| 3⅜ | 1¾ | 400 | 1⅞ | 1¾ | 1¾ | Louisiana Oil Refining | 1,302,158 | N.P. | .... | ..... | 4 | ⅝ | 2¼ | ½ | 4½ | 1 |
| 14¾ | 11 | 3,400 | 13⅛ | 12½ | 12⅞ | Mid-Continent Petroleum | 1,857,912 | N.P. | 25c | 5-15-34 | 16 | 3¾ | 8⅞ | 3¾ | 16¾ | 5 |
| 20¾ | 11½ | 800 | 17¾ | 16¾ | 16¾ | National Supply of Delaware | 382,591 | $25 | .... | 5-15-31 | 28⅝ | 4 | 13 | 3½ | 10¼ | 5 |
| 15⅞ | 10½ | 6,000 | 12 | 11¼ | 11¼ | Ohio Oil Co. | 6,563,107 | N.P. | 15c | 6-15-34 | 17⅝ | 4¾ | 11 | 5 | 19½ | 5⅛ |
| 8⅝ | 6½ | 1,000 | 7⅛ | 7 | 7 | Pacific Western Oil | 1,000,000 | N.P. | 25c‡ | 10-25-33 | 9½ | 3 | 8 | 3 | 15 | 2⅞ |
| 2½ | 1¼ | 300 | 1⅜ | 1¼ | 1⅜ | Panhandle P. & R. | 198,770 | N.P. | .... | ..... | 4¼ | ⅜ | 1¼ | ¼ | 4¼ | ⅝ |
| 20¾ | 15⅛ | 15,000 | 18 | 17 | 17¼ | Phillips Petroleum | 4,154,687 | N.P. | 25c | 5-14-34 | 18¾ | 4¾ | 8⅛ | 2 | 16⅝ | 4 |
| 16¾ | 10 | 3,400 | 12⅜ | 11½ | 11⅝ | Plymouth Oil Co. | 990,261 | $5 | 25cQ | 6-30-34 | 17⅝ | 6¾ | 12½ | 6 | 18 | 6 |
| 14⅞ | 9⅜ | 4,900 | 10¾ | 9⅞ | 10⅜ | Pure Oil | 3,038,370 | N.P. | .... | 9- 1-30 | 15⅜ | 2½ | 6½ | 2⅞ | 11⅞ | 3¼ |
| 39¼ | 33 | 500 | 35½ | 35¼ | 35½ | Royal Dutch N. Y. shares | 432,224 | $14 | $1.07½ | 8-14-33 | 39¾ | 17⅝ | 23¾ | 12⅛ | 42⅝ | 13 |
| 28⅜ | 25⅜ | 2,300 | 32¾ | 31½ | 32 | Seaboard Oil of Delaware | 1,204,460 | N.P. | 15cQ§ | 6-15-34 | 43⅜ | 15 | 20⅜ | 6⅝ | 20¾ | 5½ |
| 11⅞ | 7⅝ | 2,600 | 8⅜ | 8 | 8 | Shell Union Oil | 13,070,625 | N.P. | .... | 6-30-30 | 11⅝ | 4 | 8¾ | 2½ | 10¼ | 2½ |
| 89 | 58 | 300 | 74⅜ | 73 | 74⅜ | Shell Union Oil pfd. | 400,000 | $100 | .... | 7- 1-31 | 61 | 28½ | 65¼ | 18 | 78 | 15 |
| 11¼ | 8¼ | 200 | 9⅞ | 9¾ | 9⅞ | Simms Petroleum | 461,000 | $10 | 25c | 1-17-34 | 12⅜ | 4⅞ | 7½ | 3¼ | 11 | 3½ |
| 11½ | 7⅞ | 400 | 9½ | 9¼ | 9¼ | Skelly Oil | 1,008,514 | $25 | .... | 12-15-30 | 9⅞ | 3 | 5¾ | 2½ | 12⅞ | 2 |
| 19⅞ | 14 | 21,900 | 16⅛ | 15½ | 15¾ | Socony-Vacuum | 30,905,006 | $25 | 15cQ | 6-15-34 | 17 | 6 | 12¼ | 5¼ | 21 | 8⅜ |
| 42⅞ | 30⅝ | 10,300 | 35½ | 34½ | 34½ | Standard Oil of California | 13,102,900 | N.P. | 25c | 6-15-34 | 45 | 19½ | 31⅞ | 15⅛ | 51¾ | 23⅛ |
| 41 | 33⅞ | 900 | 37 | 37 | 37 | Standard Oil of Kansas | 200,000 | $10 | 50cQ | 7-31-34 | 39⅞ | 12¾ | 16½ | 7 | 19 | 7¾ |
| 50⅛ | 41⅛ | 19,800 | 44½ | 43 | 43⅞ | Standard Oil of New Jersey | 25,740,965 | $25 | 50cSA | 6-15-34 | 47½ | 22¾ | 37⅜ | 19⅞ | 52½ | 26 |
| 63¾ | 51½ | 400 | 62¼ | 62⅛ | 62⅛ | Sun Oil | 1,733,013 | N.P. | 25cQ | 6-15-34 | 59 | 35 | 39⅞ | 24⅜ | 45¼ | 26¾ |
| 29⅜ | 21½ | 8,000 | 24½ | 23½ | 23¾ | Texas Corp. | 9,352,371 | $25 | 25cQ | 7- 1-34 | 30⅛ | 10¾ | 18¼ | 9¼ | 36¼ | 9⅞ |
| 6½ | 3⅛ | 1,200 | 4 | 3⅞ | 3⅞ | Texas Pacific Coal & Oil | 880,703 | $10 | .... | 12-31-29 | 6½ | 1⅜ | 4 | 1½ | 6½ | 1⅞ |
| 14¼ | 8½ | 11,000 | 12⅜ | 11⅞ | 12⅛ | Tide Water Associated | 5,618,672 | N.P. | .... | 2-16-31 | 11¾ | 3⅛ | 5⅝ | 2 | 9 | 2¼ |
| 84⅜ | 64½ | 1,100 | 82 | 81⅜ | 82 | Tide Water Associated pfd. | 666,524 | $100 | $1.50Q | 4- 1-34 | 65¼ | 23½ | 60 | 20 | 68 | 20½ |
| 20½ | 15 | 7,700 | 16½ | 15⅞ | 16½ | Union Oil of California | 4,386,070 | $25 | 25cQ | 5-10-34 | 23⅜ | 8½ | 15⅜ | 8 | 26⅝ | 11 |
| 21¼ | 15¾ | 800 | 19¾ | 19 | 19 | Union Tank Car | 1,200,000 | N.P. | 30cQ | 6- 1-34 | 22¾ | 10½ | 19¼ | 11¾ | 25⅛ | 16 |
| 5¾ | 3½ | 700 | 4 | 3¾ | 4 | Wilcox Oil & Gas | 424,839 | $5 | .... | 5-10-28 | 5½ | 2 | 8¾ | 2¾ | 9⅜ | 2¾ |

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

## Active Oil Stocks Listed on New York Curb

**Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange**

| 1934 High | 1934 Low | Week ended June 30 Sales | High | Low | Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | 1933 High | 1933 Low | 1932 High | 1932 Low | 1931 High | 1931 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 31¾ | 100 | 34¼ | 33½ | 34¼ | Buckeye Pipe Line Co. | 200,000 | $50 | 75cQ | 6-15-34 | 39¾ | 25 | 35 | 17½ | 56 | 30 |
| 5½ | 2⅝ | 2,100 | 3¾ | 3½ | 3⅝ | Carib Syndicate | 579,000 | 25c | .... | ..... | 7¾ | ¼ | ¾ | ¼ | 2⅜ | ⅛ |
| 126½ | 115 | No sales | .. | .. | .. | Chesebrough Mfg. Co. | 120,000 | $25 | $1Q† | 6-29-34 | 129 | 71 | 90 | 53 | 129½ | 75 |
| 4¼ | 1¾ | 17,600 | 2¼ | 2 | 2⅛ | Cities Service | 37,804,394 | N.P. | .... | 6- 1-32 | 6¼ | 1½ | 6⅞ | 1¼ | 20¾ | 5 |
| 3¼ | 1¼ | 800 | 2 | 1¾ | 1⅞ | Colon Oil | 2,200,000 | N.P. | .... | ..... | 4 | ¼ | 1¼ | ¼ | 3⅛ | ¼ |
| 3⅞ | 1⅝ | 300 | 2¼ | 2⅛ | 2⅛ | Cosden Oil | 399,687 | $1 | .... | ..... | 3⅞ | 1⅜ | 2⅞ | ¼ | 3¾ | ⅝ |
| 13⅜ | 9⅝ | 4,300 | 12⅜ | 12⅛ | 12¼ | Creole Petroleum | 6,974,356 | $5 | .... | ..... | 12 | 4¾ | 3½ | 1¾ | 3⅞ | 1⅝ |
| 7½ | 4⅜ | 300 | 7 | 6¾ | 7 | Darby Petroleum | 509,696 | $5 | 25c | 2-15-34 | 8 | 2⅛ | 7⅛ | 1⅝ | 2½ | 1⅝ |
| 2¼ | 1⅝ | 100 | 1¾ | 1¾ | 1¾ | Derby Oil & Refining | 263,162 | N.P. | .... | ..... | 2¾ | ⅞ | 3 | 1 | 6 | 1½ |
| 36 | 31 | No sales | .. | .. | .. | Eureka Pipe Line | 50,000 | $100 | $1Q | 8- 1-34 | 41¾ | 20 | 35 | 18 | 36 | 19 |
| 76¾ | 56½ | 2,500 | 64½ | 61 | 63½ | Gulf Oil Corp. | 4,538,101 | $25 | .... | 10- 1-31 | 62 | 24 | 44¾ | 23 | 75½ | 25⅝ |
| 46⅜ | 33½ | 7,700 | 42⅜ | 41¾ | 42⅞ | Humble Oil & Refining (new) | 8,923,935 | N.P. | 25cQ | 7- 1-34 | 105½ | 40 | 55 | 35⅝ | 72 | 44½ |
| 15½ | 12⅝ | 13,900 | 15¼ | 14½ | 15 | Imperial Oil of Canada | 26,857,152 | N.P. | 25cSA†‡ | 6- 1-34 | 15⅞ | 6½ | 10⅞ | 6¼ | 18¼ | 7⅝ |
| 6⅞ | 3⅞ | No sales | .. | .. | .. | Indiana Pipe Line | 300,000 | $10 | 15cSA | 5-15-34 | 8 | 3⅛ | 7½ | 2¾ | 21⅛ | 5½ |
| 30⅝ | 19⅜ | 7,000 | 28 | 27 | 27⅞ | International Petroleum | 14,247,088 | N.P. | 56cSA†‡ | 6- 1-34 | 23½ | 8⅞ | 12¼ | 8 | 15½ | 7⅜ |
| 3¾ | 2⅛ | 3,700 | 3⅞ | 3¾ | 3¾ | Louisiana Land & Exp. | 3,000,000 | N.P. | .... | ..... | 2¼ | ⅛ | 2½ | ½ | 2 | ½ |
| 5⅞ | 4 | 300 | 4 | 3⅞ | 4 | Lion Oil Refining | 270,000 | N.P. | .... | 10-27-30 | 9½ | 1¼ | 3½ | ⅞ | 6¾ | 1½ |
| 8⅜ | 4¾ | 1,700 | 5⅜ | 5⅜ | 5⅜ | Lone Star Gas | 5,382,723 | N.P. | 16cQ§ | 3-31-34 | 11⅞ | 4¾ | 11 | 3⅜ | 29 | 5½ |
| 5½ | 4 | 100 | 5 | 5 | 5 | Mountain Producers | 1,593,584 | $10 | 15cQ | 4- 2-34 | 6½ | 2½ | 4¾ | 2⅛ | 5⅞ | 2 |
| 18⅛ | 14 | 1,500 | 15½ | 14⅝ | 14⅝ | National Fuel Gas | 3,810,183 | N.P. | 25cQ | 4-16-34 | 20 | 10 | 14⅝ | 8 | 26½ | 9¾ |
| 9½ | 7⅝ | 200 | 8¼ | 8¼ | 8¼ | National Transit | 509,000 | $12.50 | 40cSA | 6-15-34 | 10 | 5½ | 10½ | 6 | 17½ | 5 |
| 2¼ | 1⅞ | 1,200 | 2¼ | 2¼ | 2¼ | New Bradford Oil | 1,445,202 | $5 | 10c | 3-15-34 | 2⅛ | *½ | ⅞ | ¼ | 1½ | ½ |
| 2¾ | 1 | No sales | .. | .. | .. | New Mexico and Arizona | 1,000,000 | $1 | .... | ..... | 1⅞ | ½ | 1¼ | ⅝ | 3 | ¾ |
| 4¾ | 3 | 100 | 3½ | 3½ | 3½ | New York Transit | 100,000 | $5 | 15cSA | 4-14-34 | 4⅞ | 3 | 9¾ | 7½ | 14½ | 5⅞ |
| 7 | 4⅝ | No sales | .. | .. | .. | Northern Pipe Line | 120,000 | $10 | 25cSA | 1- 2-34 | 6¼ | 4¼ | 5½ | 3½ | 35½ | 20 |
| 2⅝ | ⅞ | 3,000 | 1⅞ | 1½ | 1⅝ | Pantepec Oil | 1,608,700 | N.P. | .... | ..... | 3¾ | ⅛ | ⅝ | 1/16 | 2 | ⅜ |
| 3⅛ | 1⅛ | 700 | 1¾ | 1⅛ | 1⅛ | Ryan Consolidated | 296,931 | N.P. | .... | ..... | 4¼ | ⅝ | 2⅛ | ⅝ | 3 | ¾ |
| 7⅞ | 5⅜ | 600 | 6¾ | 6⅝ | 6½ | Salt Creek Producers | 1,441,382 | $10 | 20cQ | 5- 1-34 | 9¼ | 3½ | 5½ | 2⅞ | 7⅝ | 2¾ |
| 26½ | 17½ | 1,300 | 26½ | 25½ | 25⅝ | South Penn Oil | 1,200,000 | $25 | 30cQ | 6-30-34 | 22⅛ | 11 | 16½ | 9⅝ | 23⅞ | 9¼ |
| 5¼ | 4 | 200 | 5 | 4½ | 5 | Southern Pipe Line | 100,000 | $10 | 10cSA | 3- 1-34 | 6 | 2⅛ | 10 | 3¾ | 17 | 7 |
| 47 | 41 | 50 | 46 | 46 | 46 | Southwest Penna. Pipe Lines | 35,000 | $50 | $1Q | 7- 2-34 | 43 | 24½ | 37 | 27 | 42½ | 25 |
| 32¾ | 25 | 13,100 | 27⅝ | 26⅞ | 27⅜ | Standard Oil of Indiana | 15,528,504 | $25 | 25cQ | 3-15-34 | 34 | 17 | 25⅛ | 13⅛ | 38½ | 13½ |
| 17⅝ | 14⅝ | 1,700 | 16⅝ | 16⅛ | 16⅛ | Standard Oil of Kentucky | 2,606,983 | $10 | 25cQ | 6-15-34 | 19¼ | 8⅜ | 15⅞ | 8⅞ | 23⅝ | 12⅛ |
| 16⅝ | 12⅞ | 100 | 13¼ | 13¼ | 13¼ | Standard Oil of Nebraska | 190,822 | $25 | 25cQ | 6-20-34 | 20½ | 11 | 19 | 10¼ | 36½ | 16 |
| 27½ | 18¼ | 700 | 19⅝ | 18¾ | 19⅛ | Standard Oil of Ohio | 753,740 | $25 | .... | 1- 3-33 | 41 | 15½ | 30⅛ | 15½ | 62½ | 23 |
| 2 | 1/16 | 900 | 1½ | 1¼ | 1¼ | Sunray Oil | 1,162,840 | $5 | .... | 4-15-31 | 1½ | ¼ | ⅝ | ⅛ | 5¼ | ¼ |
| 11 | 4⅝ | 700 | 6 | 5¾ | 5⅞ | Texon Oil & Land | 936,028 | N.P. | 15cQ | 6-30-34 | 13¾ | 6¼ | 10½ | 4½ | 12⅞ | 2½ |

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

**Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.**

## La.-Ark. Wildcats

(Continued from Page 68)

775 ft. W, 35 ft. N, SE cor. SW Sec. 33-19-4e.
Rigging up.
**Ark.-La. P. L. Co.'s No. 8 McEnery,** 1,420 ft. N, 1,700 ft. W, SE cor. Sec. 21-19-4e.
Comp. 1,000,000 ft. gas, 2,169 ft.
**Carbons Consolidated's No. 4 Cole,** 662 ft. S, 1,969 ft. W, NE cor. Sec. 36-20-4e.
Set 6-in. 2,246 ft.

**RED RIVER PARISH**

Louis L. Glass' No. 1 Dickson, 400 ft. S and W, NE cor. NW SE Sec. 32-12-8.
Rigging up.
**Kincaid & Kelly's No. 1 Ober,** 315 ft. N, 257 ft. W, SE cor. NW SE Sec. 5-14-10.
Arranging test 1,080 ft.
**A. D. Mytiler's No. 1 La. Delta Pecan Co.,** 1,700 ft. N, 160 ft. E, SW cor. Sec. 27-13-11.
S.D. 857 ft.
**Oynett et al's No. 1 Thomas,** 330 ft. S and E, C Sec. 34-13-8.
S.D. for fuel 740 ft.
W. K. Williams' No. 1 DeMoss Est., 900 ft. S, 330 ft. W, NE cor. Sec. 33-13-11.
Rigging up.

**SABINE PARISH**

**J. F. Anderson's No. 1 Burkett,** 135 ft. N, 655 ft. E, SW cor. NW Sec. 10-9-13.
W.O.S.R. 1,993 ft.
**R. B. Campbell et al's No. 1 Cook Land Co.,** 150 ft. N, 300 ft. W, SE cor. NW NW Sec. 35-10-12.
W.O. csg. 1,586 ft.
**G. H. Collins' No. 1 Bellieu & Carter,** 320 ft. S and W, NE cor. NW SW Sec. 21-9-13.
Used acid 1,980 ft.
Florence Oil Co.'s No. 1 McDonald, 330 ft. S and E, C Sec. 16-9-13
Set 10-in 45 ft.; set 6-in. 1,452 ft.; drlg. 1,877 ft.
**De Generes et al's No. 3 Crawford,** 330 ft. N and E, SW cor. NW NE Sec. 20-9-13.
Tested S.O.; S.D. 1,690 ft.
Graham & Dalton's No. 1 Burkett, 330 ft. N and W of C Sec. 16-9-13.
Drlg. 20 ft.
Earl P. Halliburton's No. 1 Paul, 330 ft. S and E, NW cor. SW SW Sec. 21-9-13.
Set 10-in. 45 ft.
**Helena O. & G. Co.'s No. 6 Burkett,** 330 ft. S and E, NW cor. NE Sec. 10-9-13.
Tested dry 1,989 ft.
**Lamson-Leavell & Bryant's No. 1 Bank of Pleasant Hill,** Sec. 29-9-13.
Used acid 2,000 ft.
**Zan Lloyd's No. 1 Henderson,** 330 ft. N and W, C Sec. 29-9-13.
W.O.S.R. 2,031 ft.
**Dr. O. B. Hicks' No. 1 Neal,** SE SW SE Sec. 18-9-12.
Set 10-in. 40 ft.
Geo. L. Pace's No. 2 DeSoto Corp., 1,080 ft. S, 990 ft. W, NE cor. SE Sec. 27-10-13.
Set 10-in. 40 ft.
Geo. L. Pace's No. 1 DeSoto Corp., 330 ft. N and E, SW cor. NE SE Sec. 27-10-13.
Comp. 1,000,000 ft. gas 1,943 ft.
**L. L. Posey's No. 3 Burkett,** 330 ft. S and E, NW cor. NE NW Sec. 10-9-13.
W.O.S.R. 1,984 ft.
W. H. Rowe et al's No. 1 Craig, 330 ft. S and E of C Sec. 22-9-13.
S.D. 1,200 ft.
J. A. Stinson's No. 1 Whitney Corp., 330 ft. S and W, NE cor. Sec. 8-9-13.
W.O.S.R. 2,014 ft.
**Stumpff & McFall's No. 1 Paul estate,** Sec. 10-9-13.
Tested S.W.; S.O. 1,976 ft.

**RAPIDES PARISH**

**Ben Banner's No. 1 Bentley Lbr. Co.,** 2,640 ft. E, NW cor. Sec. 11-4n-5w.
S.D. for wtr. 2,296 ft.
**Evars & Collingsworth's No. 1 Hickman,** 330 ft. S and E, NW cor. Sec. 40-4-1e.
S.D. 2,130 ft.

**VERNON PARISH**

**Anderson & Kerr Drlg. Co.'s No. 1 Nona Mills,** 330 ft. S and W, NE cor. NW SE Sec. 25-2n-9w.
Drlg. 2,460 ft.

**WINN PARISH**

Red River Ref. Co.'s No. 1 Tremont Lbr. Co., 150 ft. N and W, SE cor. NE NE Sec. 35-11-1w.
Moving in rig.

**ARKANSAS**

**CALHOUN COUNTY**

**Mid-American Oil Corp.'s No. 1 Plunkett,** 660 ft. S, 440 ft. E, NW cor. NW SW.
Drlg. 2,502 ft.

**COLUMBIA COUNTY**

**O. F. Whittaker's No. 1 Hall,** C SE NE Sec. 10-15-20.
Set 6-in. 2,102 ft.; T.D. 2,104 ft.

**CONWAY COUNTY**

**Sou. Union Gas Co.'s No. 1 Feldman,** C SW SW Sec. 6-5n-17w.
S.D. 3,100 ft.

**HEMPSTEAD COUNTY**

**A. H. Bagnelle's No. 1 Trattner & Rhinehart,** Sec. 2-13-26
S.D. 1,992 ft.

**LAFAYETTE COUNTY**

**Douglas Lawn's No. 1 Camp,** 330 ft. S and W, NE cor. SW SE Sec. 14-15-22.
Drlg. 2,060 ft.
**Earl F. Fox's No. 1 Coleman Bros.,** 330 ft. N and W, SE cor. NW NE Sec. 36-16-25.
Rigging up.
**C. V. Lenz' No. 1 Foster,** 330 ft. S, 150 ft. E. C Sec. 9-15-25.
S.D. 2,820 ft.

**LEE COUNTY**

**Ark.-La. P. L. Co.'s No. 1 McDonald,** 1,500 ft. N, 370 ft. E, SW cor. Sec. 28-1n-4e.
Drlg. 1,681 ft.

**MILLER COUNTY**

**Fitzwater et al's No. 1 Norson,** SW cor. SE SW Sec. 20-15-27.
S.D. 3,177 ft.
**King Oil Corp.'s No. 1 C. H. Schroder,** 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 2,000 ft.
**W. F. Lacey's No. 1 Gibson,** 330 ft. S and E, NW cor. SW NW Sec. 30-19-27.
S.D. 3,348 ft.
**Magnolia Pet. Co.'s No. 3 Olivet,** 250 ft. S, 160 ft. E, NW cor. NE NE Sec. 4-16-26.
Testing 2,983 ft.
**C. E. Murdock's No. 2 E. L. Beck,** 330 ft. N and W, SE cor. Sec. 33-15-26.
Fishing for D.S. 2,923 ft.
**Oil Well Oil Corp.'s No. 1 Dodd,** 300 ft. S, 200 ft. E, NW cor. SW NE Sec. 10-19-28.
S.D. 52 ft.
**Lee Timberlake et al's No. 1 E. L. Beck,** 150 ft. N and E, SW cor. NW SE Sec. 33-15-26.
Coring 2,821 ft.
**John Wrather's No. 1 Olivet,** 309 ft. S, 150 ft. E, NW cor. NE.
Testing 2,937 ft.
**E. L. Young, tr.'s No. 1 Patterson,** SE cor. SE NE Sec. 5-19-28.
Csg. collapsed 2,406 ft.; T.D. 3,655 ft.

**OUACHITA COUNTY**

**F. A. Book et al's No. 1 Arnold,** Sec. 34-15-16.
Drlg. 1,107 ft.
**L. L. McDonald's No. 1 Arnold & Doyle,** 150 ft. N and W, SE cor. NE SW Sec. 23-15-16.
W.O.S.R. 2,131 ft.
**J. D. Reynolds' No. 1 Guttry,** 452 ft. S, 150 ft. W, NE cor. NE SW Sec. 21-15-19.
S.D. 1,420 ft.

**UNION COUNTY**

**Alexander-Head Oil Co.'s No. 1 Union Saw Mill Co.,** 330 ft. S and E, NW cor. SW SW Sec. 28-19-13.
Drlg. 75 ft.
**Bellevue Corp.'s No. 1 Greening,** 1,650 ft. E, 330 ft. N, SW cor. SE SW Sec. 30-18-15.
Set 10-in. 162 ft.
**Mrs. R. K. Jones et al's No. 1 J. Davis,** 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
Coring 2,751 ft.
**McCreslenn Oil Co.'s No. 1 Union Saw Mill Co.,** 330 ft. N and W, SE cor. NE NW Sec. 3-18-13.
Rigging up.
**McCreslenn Oil Co.'s No. 2 Atkins,** 330 ft. S and W, NE cor. SW NE Sec. 3-18-13.
W.O.S.R. 3,569 ft.
**Marine Oil Co.'s No. 2-B Union Saw Mill Co.,** 330 ft. N and E, SW cor. SW NW.
Set 10-in. 119 ft.; drlg. 1,610 ft.
**Tubal Pet. Co.'s No. 1 Gaddy,** 340 ft. N and E, SW cor. SE NW Sec. 14-17-14.
S.D.; W.O. 3,416 ft.

**MISSISSIPPI**

**AMITE COUNTY**

**Mineral Resources, Inc.'s No. 1 Anderson,** C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

**FRANKLIN COUNTY**

**E. R. Ratcliff's No. 1 Banks,** SE cor. SE Sec. 20-5n-2e.
Reaming 3,750 ft.

**GREENE COUNTY**

**United Gas Public Service Co.'s No. 1 Davis,** C NW Sec. 30-1n-5w.
Drlg. 7,180 ft.

**ISSAQUENA COUNTY**

**Pelican Oil & Gasoline Co.'s No. 1 Steel Bayou Corp.,** 400 ft. N, 350 ft. E, SW cor. NW Sec. 14-12n-8w.
S.D. 2,005 ft.

**JONES COUNTY**

**Snow-Black Pet. Co.'s No. 2 Watson,** 530 ft. W, 200 ft. S, C Sec. 24-7n-13w.
Set 12-in. 326 ft.

**SIMPSON COUNTY**

**Berry Corp.'s No. 2 R. T. Berry,** Sec. 33-2n-4e.
Set 7-in. 2,048 ft.
**Perkins & Dees' No. 1 Lee,** 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w.
Drlg. 560 ft.

**WALTHALL COUNTY**

**Mutual O. & G. Co.'s No. 1 Boyd,** SW cor. SW SE Sec. 24-2n-9e.
Moving in rig.

**WARREN COUNTY**

**Orbet Drlg. Co.'s No. 1 R. L. Parker,** 300 ft. E, CWL Sec. 14-14-1e.
S.D. 3,169 ft.

## La.-Ark. Proven Fields

**NORTH LOUISIANA**

**CADDO—BLANCHARD**

**Producers and Pyramid O. & G. Co.'s No. 1 Hammock,** 150 ft. S, 1,525 ft. W, NE cor. SE SW Sec. 3-18-16.
Rigging up.
**Pyramid-Babare's No. 1 Hearne,** 660 ft. N and E, SW cor. SE Sec. 34-19-16.
Rigging up.

**CADDO—HOSSTON**

**Bayou State O. & G. Co.'s No. 1 Connell,** 1,900 ft. N, 1,198 ft. E, SW cor. Sec. 15-21-14.
Drlg. 200 ft.
**Shore Line Oil Corp.'s No. 1 Harrell,** 250 ft. N and W, SE cor. Sec. 2-22-16.
Set 10-in. 40 ft.; drlg. 760 ft.
**Shore Line Oil Corp.'s No. 1-B Standard,** 250 ft. N and W, SE cor. Sec. 12-21-16.
Set 10-in. 53 ft.; set 6-in. 1,035 ft.; drlg. 10,41 ft.
**Shore Line Oil Corp.'s No. 1-C Standard,** 250 ft. S and E, NW cor NE Sec. 18-21-15.
Drlg. 25 ft.

**CADDO—RODESSA**

**United Gas Pub. Ser. Co.'s No. 1 Deer,** 1,320 ft. N and W, SE cor. Sec. 28-23-16.
Comp. 62,500,000 ft. gas, 5,850 ft.

**SABINE PARISH—ZWOLLE**

**Alexander & Cane's No. 1 Fogman,** SE cor. N½ SW NE Sec. 18-7-11.
S.D. 1,300 ft.
**Ivan A. Allen's No. 1 La. Long Leaf,** 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 750 ft.
**Dyer et al's No. 1 McCollister,** 330 ft. S and E, NW cor. SW NE Sec. 24-7-12.
S.D. 1,100 ft.
**Foster & Hartman's No. 1 Bowman-Hicks,** 330 ft. S and E, NW cor. NE Sec. 10-7-12.
Used acid 2,692 ft.
**E. D. Holcomb's No. 1 Porter,** 330 ft. S, 330 ft. W, NE cor. SE Sec. 7-7-11.
W.O.S.R. 2,580 ft.
**M. J. Kissick's No. 1 Sermon,** 388 ft. N, 696 ft. E, SW cor. SW SE Sec. 11-4-13.
T.A. 146 ft.
**H. C. Maulding's No. 2 DeLatin,** 330 ft. S and E, NW cor. NE SE Sec. 3-7-11.
Set 10-in. 41 ft.; S.D. 580 ft.
**Monroe Prod. Co.'s No. 6 Sabine Lbr. Co.,** 330 ft. N and E, SW cor. SE NE Sec. 13-7-12.
Comp. flowing 350 bbls., 2,418 ft.
**Monroe Prod. Co.'s No. 7 Sabine Lbr. Co.,** 330 ft. N and E, SW cor. NW SE Sec. 11-7-12.
Rigging up.
**Geo. L. Pace's No. 2 Phillips,** 330 ft. N, 80 ft. W, SE cor. Sec. 25-8-12.
Rigging up.
**Pelican Nat. Gas Co.'s No. 14 Sabine Lbr. Co.,** 330 ft. N and W, SE cor. NE SW Sec. 11-7-12.
Rigging up.
**Pelican Nat. Gas Co.'s No. 29 4-L Co., Sec. 29-8-11.**
Tested dry; W.O. 2,660 ft.
**Pelican Nat. Gas Co.'s No. 32 La. Long Leaf,** 314 ft. S, 35 ft. W, NE cor. W½ NW Sec. 31-8-11.
Tested S.O.; S.D.; W.O. 2,575 ft.
**Tarver & Bauer's No. 1 Barthold,** 330 ft. N and W, SE cor. SW SE Sec. 25-8-12.
S.D.; W.O. 2,747 ft.
**Texas Co.'s No. 1 Billbray,** 330 ft. N and E, SW cor. NW NE Sec. 32-8-11.
Dry and abd. 2,625 ft.
**Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-8-12.**
S.D. 1,590 ft.

**EAST TEXAS (BORDER COUNTIES)**

**CASS COUNTY**

**United Gas Public Service Co.'s No. 1 Walton, John Coleman Sur.**
Drlg. 3,893 ft.
**R. K. Kamon et al's No. 1 Savage, Mary Patterson Sur.**
S.D. 3,918 ft.

**HARRISON COUNTY**

**R. C. Payne et al's No. 1 Lowery, E. D. Spain Sur.**
Set 2½-in. 3,524 ft.; T.D. 4,003 ft.

**PANOLA COUNTY**

**Givens & Holloway's No. 1 Wooten est., Winnie Mann Sur.**
S.D. 750 ft.
**R. W. Price's No. 1 Crawford, J. A. Williams Sur.**
Rigging up.

**SHELBY COUNTY**

**Bush Oil Int.'s No. 1 Windham, W. M. Blackburn Sur.**
S.D. 3,366 ft.
**R. H. Davis' No. 1 Wooten est., Winnie Mann est.**
Rigging up.
**C. E. Litchfield's No. 1 Windham, A. H. English Sur.**
Set 7-in. 3,252 ft.
**Cliff Stovall's No. 1 Pickering Lbr. Co., C. H. Patterson Sur.**
Set 10-in. 20 ft.
**Turner & Neil's No. 1 Pickering Lbr. Co., P. W. Harvey Sur.**
S.D. 250 ft.

**ALABAMA**

**CLARKE COUNTY**

**Magnolia Pet. Co.'s No. 1 Scotch Lbr. Co.,** 250 ft. N, 310 ft. E, C Sec. 17-10n-3e.
Drlg. 2,460 ft.

**HOUSTON COUNTY**

**Rice O. & G. Co.'s No. 1 Oakley est.,** SE cor. NW SW Sec. 9-3n-29e.
Drlg. 1,650 ft.

## Kansas Wildcats

(Continued from Page 67)

SE cor. Sec. 10-17-16w.
Location.

**RUSSELL COUNTY**

**Blair et al's No. 1 Nudenthal,** NE NE Sec. 23-14-15w.
Location.
**Blair et al's No. 1 Funk,** SW NW SE Sec. 16-14-14w.
Location.
**Blair et al's No. 1 Hill,** SW NE Sec. 14-13-14w.
S.O. 2,760-65 ft.; S.D. 2,782 ft.
**J. H. Liggett's No. 1 Chrisler,** C SW SW Sec. 9-11-15w.
H.F.W. 3,116 ft.; drlg. 3,190 ft.
**C. L. Price et al's No. 1 Bender-B,** NW SE Sec. 10-16-13w.
Material.

**SEDGWICK COUNTY**

**Bar Key Pet. Co.'s No. 1 Swenson,** C NE Sec. 6-26-2.
Show of oil 2,978 ft.; T.D.
**Corn & Aylward's No. 1 Heck,** NW SW Sec. 2-27-1w.
Drlg. 2,105 ft.
**D. Lauck's No. 1 Gillespie,** NE SE SW Sec. 6-28-1w.
Fishing 405 ft.
**Shawver et al's No. 1 Schulte,** NE NE Sec. 13-28-2w.
Drlg. 2,285 ft.
**Sovereign Oil Co.'s No. 1 Nichols,** C NW SE Sec. 20-25-1w.
T.D. 2,203 ft.; S.D.
**Trees Oil, Derby Oil et al's No. 1 McMinn,** SW NE Sec. 36-26-1e.
Drlg. 1,797 ft.

**STAFFORD COUNTY**

**Stanolind O. & G. Co.'s No. 1 Denker,** 693 ft. from N line, 330 ft. from W line, SW Sec. 10-22-12w.
Coring 3,740 ft.
**Vickers and Phillips' No. 1 Cravens,** SW NE Sec. 15-25-11w.
Drlg. 3,990 ft.

**SUMNER COUNTY**

**Morgan & Flynn's No. 1 Mercer,** NW NE NW Sec. 36-32-1w.
U.R. 8-in. 3,040 ft.; T.D.

**TREGO COUNTY**

**Alma Pet. Co. et al's No. 1 Rhodes estate,** SW SW Sec. 14-11-23w.
T.D. 3,885 ft.; fishing for bailer.
**Central Commercial's No. 2 King,** C SE SW NE.
Drlg. out cave; T.D. 4,015 ft.
**Mid-Kansas O. & G. Co.'s No. 1 Kline,** SW SE Sec. 19-14-24w.
Rigged up.

**WOODSON COUNTY**

**Sheedy et al's No. 1 Hassenpflug,** NW cor. NE Sec. 34-25-14.
Rigging up.
**Schwartz et al's No. 1 Collins,** SW NW NE Sec. 30-23-14.
S.D. 200 ft.


# IMPORTANT BOOKS
## for the Oil Man's Library

**"THE ACCOUNTS OF AN OIL COMPANY"**

Those who desire to become better acquainted with the accounting principles and procedure followed by oil companies whose accounting systems have grown up along with other activities of the business, can find genuine help in the new book "The Accounts of an Oil Company," by H. G. Humphreys. The contents are set forth in a manner which is the result, not of study alone or of accounting work alone, but of that excellent combination—real scholarship plus practical experience.

The book is written in a most interesting and readable style. In his opening chapter, Balance Sheets and General Accounts, Mr. Humphreys brings out most clearly the fact that from the comparative balance sheets a statement can be prepared showing the sources from which funds were obtained and the manner in which such funds were applied. A statement of this sort is of invaluable aid to executives and accounting officers, and the author is to be commended for bringing this matter to the reader's attention at such an early point in the book.

The first few chapters of this volume describe a satisfactory and logical accounting procedure for oil companies. In the remaining chapters the author discusses the accounting methods used for oil and gas properties, the natural gasoline department, the refinery department, the lubricating department, and the marketing department.

Until the publication of Mr. Humphreys' book a few weeks ago, the only book available on this subject was a text which, though of excellent caliber, was several years old. For the man who must have a book covering the very latest practices in oil-company accounting, this work would seem to fill his needs perfectly. The writer's former service as chief auditor of the Skelly Oil Co., and his previous work as a certified public accountant, certainly qualify him to speak with authority on this subject.

"The Accounts of an Oil Company" may be purchased through the Book Department of The Oil and Gas Journal at the regular price of $2, express prepaid. A copy will be forwarded promptly upon receipt of check or money order for that sum; where no payment accompanies the order the book will be sent express c.o.d.

## Rocky Mountain Area

(Continued from Page 80)

drilling at 1,900 feet, having made 1,600 feet since last week's report. Same company's No. 1 Consolidated gas lease, near C Section 15-35-6w, is drilling at 979 feet, and its No. 3 fee, 660 feet south of C Section 15-35-6w, cemented the 7-inch at 2,856 feet. Texas Co.'s No. 1 Kearns, W SW NW Section 23-35-6w, is drilling at 2,559 feet, and its No. 3 Purdy, W NW SW Section 35-35-6w, is swabbing for a test at 2,924 feet, total depth. Same company's No. 4 Purdy, SW SW Section 35-35-6w, is reaming at 300 feet, total depth.

### Carbon County

Minnesota-Flatwillow Oil Co.'s No. 1, SW cor. SE Section 1-6s-23, Blue Creek, is drilling at 1,287 feet, and Ohio Oil Co.'s No. 14 Maddox, C NW NW Section 10-7s-21, Dry Creek, is drilling at 3,049 feet in shale.

### Pondera County

California Co.'s No. 1 Northwestern Properties Co., SW NE SE Section 20-28-4w, North Pondera, is drilling at 1,650 feet.

### Teton County

Ned Cheadle and others' No. 1 Balsinger, NE SE NW Section 20-27-5w, West Pondera, is drilling at 1,490 feet.

### Toole County

A new location in the Devon district is Thelan & Freeman's No. 1 Johnson, NW NE NE Section 29-33-2e, is rigging up, and Bruce P. Radigan and others' No. 1 McDonough, NW cor. Section 17-33-2e, is waiting for casing at 1,415 feet.

## Eastern Fields

(Continued from Page 77)

County, the important No. 1 on the Hulda Jenkins farm which is being drilled from the gas showing in the Gantz sand to the oil formation, the Fifth sand, will be completed in a few days. It is within 100 feet of the sand. No. 2 on the farm is showing for about 75 bbls. a day. In the No. 1 the 30-foot sand was at 2,728 feet with about 519,000 feet of gas a day showing at 2,750-53 feet. This volume blew down to about 369,000 feet and was drilled by. The Philadelphia Oil Co. owns the lease and is the operator. In this township, Carnegie Natural Gas Co. has reached below the Salt sand on the N. B. Redd farm. There was about 3,000,000 feet a day showing in that formation. This company is building rig on the Farabee lease and hauling in rig for the Cole test. Raymond Orrill and others reached the Fifth sand in No. 4 on the G. L. Walker farm at 2,957 feet. There was a showing of oil at 2,974 feet and it will be shot. The total depth was 2,993 feet. On the Mary B. Lindley farm, Union Gasoline & Oil Co. has reached 2,854 feet.

In South Franklin Township, E. H. and J. B. Tague are drilling No. 11 on the Adaline D. McKennan estate and have reached 350 feet. Furman Nuss & Co. have resumed drilling in No. 1 on the Jason Buchanan farm and is at 790 feet. In drilling deeper No. 1 on the S. C. Weir farm, this company reached 3,061 feet. This well is being drilled from the Fifty-foot sand.

### Washington County

In East Findley Township, Washington County, Union Gasoline & Oil Corp. shot No. 3 on the J. N. Clutter (Sprowls lease) and brought production up to 200 bbls. a day. Myers, Hoskinson and others will shoot their No. 2 on the J. N. Clutter lease in the hope of improving production. Their No. 1 is doing about 100 bbls. a day. In the log of Union Gasoline & Oil Corp.'s No. 3 the top of the Gordon sand was at 2,648 feet with gas and oil at 2,672 feet and a total depth of 2,683 feet.

In Greene County J. B. Orndoff has reached 1,580 feet on the W. H. Scott farm in Springhill Township. South Penn Oil Co. is drilling at 2,765 feet in deepening No. 2 on the J. C. Barrickman farm.

In Chartiers Township, Washington County, Cannonsburg Iron & Steel Co. is drilling on the Jeff Carr farm. In Houston, this company is drilling a test on its own property.

In Fayette County, Carnegie Natural Gas Co. is drilling at 642 feet on the George N. Boyd farm in Jefferson Township.

## Central West Fields

(Continued from Page 75)

Asher farm, Lot 20, is a gas well at 3,460 feet.

In Stark County, East Ohio Gas Co.'s No. 1 Mary Esselbourne farm, Section 4, Plain Township, is a gas well at a total depth of 4,531 feet. Same company's No. 1 William Green farm, Section 20, same township, is a gas well at 4,547 feet. Lyons and others are drilling on the Christ Graber farm, Section 22, Plain Township.

In Tuscarawas County, W. D. Hunt and others are drilling on the A. E. B. Chittenden farm, Lot 21, Perry Township.

### Guernsey County

In Guernsey County, Ferguson & McCullough's No. 3 Fred R. Foraker farm, Section 20, Willis Township, is a gas well at 1,601 feet. Clymer & Co. is drilling on the M. H. Petty farm, Lot 2, same township. George Jewell and others are drilling on the Joe Polasky farm, Lot 2, same township. C. C. Wharton is drilling No. 3 R. and E. Frame farm, Lot 1, and R. E. Scott has a location on the McPeak and others' farm, Lot 20, same township. George Jewell has a location on the Claude Evans farm, Lot 18, Center Township, same county. Kenova Oil & Gas Co. is drilling No. 4 Jesse Fowler farm, Lot 10, Wheeler Township, same county.

In Lawrence County, Chartiers Oil & Gas Co. is drilling on the Dennis Burnett farm, Section 19, Mason Township, and Ohio Fuel Gas Co. is drilling No. 1-5,801 on the J. B. Benson farm, Section 20, Union Township, same county.

In Gallia County, Ohio Fuel Gas Co. has a rig for No. 1-5,812 on the S. R. Bing farm, Section 22, Addison Township.

In Belmont County, William Patton and others are drilling No. 15 on the Ernest J. Peffer farm, Section 34, Somerset Township.

In Stark County, Ohio Fuel Gas Co. set a stake for No. 2-5,846 in Section 10, Jackson Township. Same company made a location for No. 1-5,813 on the A. J. Stoner farm, Section 3, same township. Same company is drilling below 3,860 feet in No. 1-5,796 feet on the Rachel Beltz farm, Section 7, Jackson Township, same county. Same company is drilling No. 1-5,802 on the G. H. Fulmer farm, Section 12, Hanover Township, below 2,800 feet. East Ohio Gas Co. is drilling below 4,200 feet, in No. 2 William J. Pontius farm, Section 16, Plain Township, same county. Same company's No. 2 on the Hoover Development Co.'s farm, Section 9, same township, is drilling below 3,000 feet.

### INDIANA

No completions were reported from the Indiana fields. In Sullivan County, Pierson, Yeager and others' test on the Ellery D. Hayden farm, Section 10, Turman Township, is nearing completion. M. V. Yeager and others' No. 1 Link A. Morris farm, NW Section 8, Fairbanks Township, same county, is drilling below 1,900 feet and Yeager and others are drilling on the John Hunt farm, Section 6, same township, below 1,500 feet.

In Gibson County, Gib Van Oil Co. is drilling No. 2 G. W. Shoulty farm, Section 18, Patoka Township. In Pike County, Claud Noble is drilling No. 2 Ed Adams farm. In Clay Township, same county, Indiana Southwestern Gas Corp. is drilling on the M. B. Thomas farm, SE NE Section 32, Clay Township, same county. In Knox County, Murphy Oil Co. is drilling No. 5 on the Hamilton Like farm, SE SE Section 7, Harrison Township. The best oil completion in the Indiana Field for the month was Big Four Oil & Gas Co.'s No. 3 Nora Hope farm, NW NE Section 19, Washington Township, same county, which produced an initial of 90 bbls. Knox Engineering Oil Corp.'s No. 3 Sam McCullough farm, NW Section 10, Patoka Township, Gibson County, produced an initial of 25 bbls. at 1,341 feet.

In Pike County, Rendall & Stroble's No. 3 Joe Carr farm, SE Section 14, Logan Township, produced initially 85 bbls. at 1,383 feet. Charles L. Diver & Co.'s No. 5 Glendora Robling farm, SE Section 14, same township, produced 25 bbls. initial at 1,369 feet.

In Knox County, Murphy Oil Co.'s No. 5 Hamilton Like farm, Section 19, Harrison Township, was a dry hole at 1,260 feet. In Posey County, L. R. Henley's test on the Jacob Klencke farm, NE NW Section 23, Robinson Township, produced 25 bbls. initial after given a shot, at 1,179 feet.

### ILLINOIS

Voss and others' No. 1 on the M. Breiner farm, SE Section 27, Looking Glass Township, Clinton County, is a dry hole there being no showing of oil or gas at a total depth of 1,279 feet.

### KENTUCKY

Three completions were reported from the Kentucky fields, all in Ohio County. J. E. Hare and others' No. 5 C. H. Farmer farm, in the Ralph Pool, had an initial of 4 bbls. Brenner, Adams & Co.'s test on the Ada Kelley 80 acres, same county, produced 5 bbls. J. H. Haynes' No. 4 Ellis Hines farm, in the Swope Pool, produced 10 bbls.

## Gulf Coast Fields and Wildcats

(Continued from Page 71)

Texas Co.'s No. 11-B Belcher, 660 ft. S, 48 deg. 9 ft. E of B-10 and 330 ft. N, 41 deg. 51 ft. E of SW line of lease, H. N. Little Sur. ..... Cellar.

Texas Co.'s No. 2 Boft, 200 ft. N and 24 ft. W of S line and 330 ft. S 41 deg. 51 ft. E from NE line of Lot No. 7 in Chas. O'Donnell Sur. ..... Derrick.

**Texas Co.'s No. 1 John Groce, 200 ft. E of W line, 300 ft. from N line at right angles** ..... T.D. 5,150 ft.; comp. 558 bbls., day; ¼-in. choke, 4% wash wtr.; tubing pressure 510 lbs.; csg. pressure 720 lbs.

Texas Co.'s No. 2 Houston Oil Field Association, 247 ft. from N line and 247 ft. from S line and 441 ft. from W line of Lot 45, A.C.H.&B. Sur., Sec. 91 .... Rigging up.

**Texas Co.'s No. 1 W. D. Morrison, 743 ft. from N and 441 ft. from E lines of lease, C of Lot 33, A.C.H.&B. Sub., Sec. 91** ..... T.D. 3,873 ft.; comp. 446 bbls., day; ¼-in. choke, 23.8 gravity; tubing pressure 990 lbs.

Texas Co.'s No. 1 Houston Oil Field Association, 330 ft. from W line and 265 ft. from S line of Lot 6, A.C.H.&B. Sur., Sec. 91 ..... Drlg. sand and lime 1,951 ft.

Windsor Oil Co.'s No. 1 Colby, 325 ft. from NW line and 330 ft. from NE line of 50-ac. lease in T. Sproggins Sur. ..... Rigging up.

**STRATTON RIDGE—BRAZORIA COUNTY**

**Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Williams Sur., 600 ft. E of No. 3 and 330 ft. S at R/A** ..... Stuck D.S. 7,202 ft.; S.D. 6,250 ft.

**WEST COLUMBIA—BRAZORIA COUNTY**

**Miramar Oil Corp.'s No. 2 Hogg, 100 ft. N of No. 2 and 100 ft. from W line of lease** ..... T.D. 5,360 ft.; P.B. 2,400 ft.; drlg. shale 4,220 ft.

Texas Co.'s No. 84 Hogg, 2,483 ft. N, 50 ft. W from SE cor. of lease in M. Varner Sur. ..... Drlg. gumbo 1,976 ft.

**BARBERS HILL—CHAMBERS COUNTY**

McAlbert's No. 6 Wilburn, 240 ft. W of No. 5 in Henry Griffith Sur. ..... T.D. 3,655 ft.; abd.

**Mills Bennett Prod. Co.'s No. 3-B Gulf fee, 25 ft. out of SE cor. of lease** ..... Top salt 1,402 ft.; drlg. salt 3,495 ft.

Mills Bennett Prod. Co.'s No. 9-B Wilburn, Henry Griffith league, 737 ft. E W line and 190 ft. S N line of lease ..... T.D. 948 ft.; recemented cap rock.

Humble O. & R. Co.'s No. 6-B Kirby, 593 ft. N of S line, 388 ft. E of W line of lease, or 125 ft. N and 288 ft. W of No. 5 ..... Drlg. salt 2,680 ft.

Moody Corp.'s No. 5-A E. W. Barber, 100 ft. E of W line and 70 ft. N of S line of lease ..... Drlg. salt 1,638 ft.

Moody Corp.'s No. 6-A Barber, 75 ft. W or E line and 400 ft. N of S line of lease ..... Drlg. gumbo 1,149 ft.

Sinclair Prairie Oil Co.'s No. 18-A Wilburn, Henry Griffith league, 150 ft. W of No. 17-A and 14 ft. S N line of lease ..... T.D. 1,142 ft.; W.O.C. lost returns.

Sun Oil Co.'s No. 9 Chambers Co., 181 ft. W of No. 8 and 50 ft. from N line of lease ..... Drlg. salt 2,878 ft.

Sun Oil Co.'s No. 3 Higgins, 50 ft. E line and direct offset to McAlbert's No. 2 Higgins in Wm. Hodges Sur. ..... T.D. 3,231 ft.; oil sand; prep. to abd.

Sun Oil Co.'s No. 5 Higgins, 125 ft. W of No. 4 ..... Drlg. salt 3,335 ft.

Sun Oil Co.'s No. 14 Wilburn fee, 130 ft. W of No. 15 and 40 ft. from N line of 30-acre tract in William Hodges Sur. ..... Drlg. lime 4,729 ft.

Texas Co.'s No. 8 Wilburn, 25 ft. W of No. 5 and 50 ft. N of S line in the Henry Griffith League ..... T.D. 5,753 ft.; P.B. to 5,160 ft.; 5,175 ft.; swabbed 90% S.W.; putting on pump.

Texas Gulf Prod. Co.'s No. 8 A. E. Barber, 400 ft. S of N line and 50 ft. E of W line of lease ..... Drlg. shale and lime 4,636 ft.

Texas Gulf Prod. Co.'s No. 2 Eberspacher, 480 ft. from S line and center of strip No. 4 ..... Location.

Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line ..... T.D. 5,059 ft.; anhydrite; set screen and liner.

Yount Lee Oil Co.'s No. 24 Chambers County, 400 ft. W of No. 22 in line with No. 21 ..... T.S. 1,456 ft.; drlg. salt 3,459 ft.

Yount Lee Oil Co.'s No. 25 Chambers County, 75 ft. S, 50 ft. W of NE cor. of lease ..... Sand rock 385 ft.; standing.

Yount Lee Oil Co.'s No. 8 Phillips, Wm. Hodges Sur. .... Top sand 3,354 ft.; drlg. sandy shale 3,831 ft.

**RABBS RIDGE—FORT BEND COUNTY**

Humble O. & R. Co.'s No. 11 T. R. Booth, 231 ft. N, 15 ft. W of NE cor. of A. Myers tract No. 1, 180 acres in J. Rabb Sur. ..... Shale 5,250 ft.; T.D.; comp. 52 bbls. hr.; ¾-in. choke; tubing pressure 640 lbs.; csg. pressure 750 lbs.

Gulf-Humble's No. 11-A F. D. Booth, J. Rabb Sur. .... T.D. 5,355 ft.; P.B. to 5,347 ft.; W.O.C.

Humble O. & R. Co.'s No. 26-A Lockwood & Sharp, 755 ft. N and 14 ft. W of No. 26-B, in J. Rabb Sur. .... Drlg. shale 4,900 ft.

Humble-Gulf's No. 28-A Lockwood & Sharp, 379 ft. from S line and 2,872 ft. from E line of "A" lease in J. Rabb Sur. ..... Derrick.

Humble-Gulf's No. 29-A Lockwood & Sharp ..... Location.

Humble-Gulf's No. 28-D Lockwood & Sharp ..... Location.

Naylor's No. 4 S. B. Gehr, 1,260 ft. from W line and 330 ft. from S line of lease in Samuel Kennedy Sur. ..... T.D. 5,406 ft.; set screen; wouldn't flow; S.D.

**ORCHARD—FORT BEND COUNTY**

Gulf Prod. Co.'s No. 40 Moore ..... Drlg. gumbo and lime 1,492 ft.

**HIGH ISLAND—GALVESTON COUNTY**

Brusard & Brookner's No. 1 Nebout ..... Drlg. 299 ft.

D.E.M. Oil Co.'s No. 2 Great Western ..... Deepened from 152 ft. to 172 ft.; cmtd. 6-in. csg.; comp. 25 bbls. on pump.

Yount Lee Oil Co.'s No. 4 Broussary & Orme, M. Dunman Sur., 129 ft. SW of No. 3 ..... Top salt 4,565 ft.; T.D. shale and pyrite 5,358 ft.; drlg. lime 4,934 ft.
Yount Lee Oil Co.'s No. 41 Cade, Fitzsimmons Sur. ..... Drlg. shale 2,197 ft.
Yount Lee Oil Co.'s No. 40 Cade, 430 ft. NW of No. 2-B, 360 ft. from E line of lease and in line with No. 39 and No. 3-B, Fitzsimmons Sur. ..... Drlg. hard sand 4,207 ft.
Yount Lee Oil Co.'s No. 2 Mathis, M. Dunman Sur., direct offset No. 1 Spencer ..... Base salt 3,760 ft.; T.D. 4,157 ft.; abd.
Yount Lee Oil Co.'s No. 22 Smith ..... Drlg. sand 4,362 ft.
Yount Lee Oil Co.'s No. 24 Smith ..... Sand 5,929 ft.; S.D.
Yount Lee Oil Co.'s No. 42 Cade, N. Fitzsimmons Sur., half way between Nos. 26 and 28 and 150 ft. E at right angles ..... Derrick.

**ARRIOLA—HARDIN COUNTY**

Republic-Houston's No. 2-X Arriola fee ..... T.D. 5,235 ft.; W.O.C.
Republic-Houston Oil Co.'s No. 8 fee ..... Drlg. 3,250 ft.

**BATSON—HARDIN COUNTY**

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ..... T.D. 4,795 ft.; flowed salt water: P.B. to 4,555 ft.; tested S.W. and oil from 4,783-95 ft.

**SARATOGA—HARDIN COUNTY**

Rio Bravo Oil Co.'s No. 110 Jordit, 200 ft. due S No. 109 .. Coring sand and shale 1,418 ft.
Sinclair Oil Co.'s No. 1 Teel Estate, 2,655 ft. W of E line of league, 4,255 ft. S of N line of league, or 1,022 ft. S of N line and 717 ft. W of E line of 134-A. tract ..... Drlg. shale 4,775 ft.
Skinner Oil Co.'s No. 3 Sessler ..... T.D. 2,230 ft.; lost returns; drlg. cap rock 2,180 ft.

**SOUR LAKE—HARDIN COUNTY**

Alpha Pet. Co.'s No. 1 J. M. Weiss, 122 ft. S of Steinberger's No. 1 Weiss in Blk. 25 ..... T.D. 6,823 ft.; set 7-in. at 6,818 ft.
Humble O. & R. Co.'s No. 1 Kirby et al, 140 ft. E W line and 300 ft. S N line of old Gulf 170-acre tract, S. Jackson Sur. ..... Drlg. shale 1,965 ft.
Parr et al's No. 1 Benard, in W.C.R.R. Sur. No. 69 (west edge) ..... T.D. 7,061 ft.; P.B. 4,800 ft.; making est. 25 bbls. daily.
Steinberger Pet. Co.'s No. 1 Weiss, 150 ft. W of Parr No. 1 and 50 ft. out of SE cor. of Blk. 28, E. B. Williams Sur. ..... Location.
Texas Co.'s No. 308 fee, 375 ft. S, 110 ft. E of No. 299, in Stephen Jackson League ..... T.D. 2,049 ft.; sidetracking 1,846 ft.
Yount Lee Oil Co.'s No. 6 Lynn, 250 ft. from W line and 200 ft. from N line of 43-acre tract in Sour Lake Oil Co. Sub. ..... Drlg. salt and shale 6,894 ft.

**GOOSE CREEK—HARRIS COUNTY**

Edwards Drlg. Co.'s No. 2 Matthews, E offset to Mirimar's No. 2 Hughes ..... T.D. 4,566 ft.; prep. to swab.
Gulf Prod. Co.'s No. 18-A Tabb-fee, 217 ft. S of No. 17-A and C of tract in Wm. Scott Sur. ..... T.D. 4,475 ft.; comp. 404 bbls. dly.
Herring's No. 1 Williams, 180 ft. from SE cor. and 55 ft. NE of Hybush's No. 3, in W. Scott upper league .. Cellar.
Hoffner & Moore's No. 1 A. A. Wright, 50 ft. N and 50 ft. E of SW cor. of Blk. 7, Wm. Scott Sur., Abst. No. 65 ..... T.D. 5,221 ft., shale; standing.
Humble O. & R. Co.'s No. 30 Simms-Smith ..... Drlg. plug 755 ft.
Humble O. & R. Co.'s No. 28 Sweet, 13 ft. W of SE cor. of Scott 2½-acre tract and 53 ft. from N line of lease, Wm. Scott Sur. No. 67 ..... Location.
Humble O. & R. Co.'s No. 29 Sweet, 418 ft. from N line of Sweet lease and 33.8 ft. E of SW cor. of Hanzen's 1-ac. tract in Wm. Scott Sur. ..... Drlg. shale 830 ft.
Jay Simmons' No. 1 Dannebaum, 45 ft. from S and 50 ft. from E lines of lease in W. Scott Labor Sur. ... Derrick.
Thomas Drlg. Co.'s No. 1 Jones ..... T.D. 5,108 ft.; abd.

**HUMBLE—HARRIS COUNTY**

Imperator Oil Co.'s No. 1 N. N. Lee, 400 ft. from E line and 150 ft. from N line of 88-ac. tract, in E. Ruhl Sur. ..... Drlg. gumbo 200 ft.
Rio Bravo Oil Corp.'s No. 8 fee, 250 ft. E, 100 ft. S of No. 2 fee ..... Drlg. shale 3,941 ft.
Texas Co.'s No. 47 Stevenson, J. B. Stevenson Sur., 859 ft. E. 457 ft. S of NW cor., Lot 1-A ..... T.D. 5,338 ft.; sidetracking, salt 4,032 ft.

**PIERCE JUNCTION—HARRIS COUNTY**

Gulf Prod. Co.'s No. 10 H. C. Cain, 399 ft. S and 290 ft. E of NW cor. of lease and 217 ft. N of No. 9, 160-acre tract in J. Hamilton Sur. No. 879 ..... Drlg. gumbo and lime 2,537 ft.
Rio Bravo Oil Corp.'s No. 9-A Settegast, 1,575 ft. N line, 350 ft. E line NE cor. "A" lease, J. A. Kopman Sur. .. T.D. 4,510 ft.; rigging up to work over: standing.
Rio Bravo Oil Corp.'s No. 12-A Settegast, 1,410 ft. N line, 650 ft. E line, J. A. Kopman Sur. ..... T.D. 5,433 ft.; prep. to swab.

**TOMBALL—HARRIS COUNTY**

Amerada-Rycade's No. 1-A Metzler, J. House Sur. .... Derrick.
Amerada-Stanolind Oil Co.'s No. 4 Rudel, 500 ft. from S line and 500 ft. from W line of tract in J. House Sur. ..... Drlg. shale 4,400 ft.
Houston Oil Co.'s No. 1 Fred Heard, 335 ft. from N line and 691 ft. from E line of lease in J. M. Hooper Sur. ..... Rigging up.
Humble-Magnolia's No. 2 C. F. W. Hendricks, 966 ft. S of N line and 466 ft. W of E line of 96-A. tract in Wm. Heard Sur. ..... Spud.
Humble O. & R. Co.'s No. 1-B J. F. W. Kobs, 466 ft. from S line and 405 ft. E. of W line of tract, J. Edwards Sur. ..... T.D 5,603 ft.; comp. 6 bbls. hr.; ¼-in. choke; tubing pressure 1,975 lbs.
Humble O. & R. Co.'s No. 3-B Kobs, 2,132 ft. S of N line, 369 ft. W of E line of lease in J. H. Edwards Sur. ..... T.D. 5,624 ft.; comp. 2 bbls. hr.; ¼-in. choke.
Humble-Magnolia's No. 1 Krug, 600 ft. N and 187 ft. E from SW cor. of J. F. W. Kobs 30.6-acre tract in J. H. Edwards Sur. ..... Location.
Humble-Magnolia's No. 2 Krug, 466 ft. from E line of lease and 800 ft. S of S line of Sherer 112-acre tract in J. H. Edwards Sur. ..... Location.
Humble and Magnolia Pet. Co.'s No. 3 B. J. Petrick, 700 ft. S of N line, 1,171 ft. W of E line of lease in J. M. Hooper Sur. No. A-373 ..... Derrick.
Humble & Magnolia's No. 2 Rudel-Oster, 150 ft. S of Amerada & Stanolind's No. 2 Fletcher, half way between E and W lines of 50-acre tract in J. House Sur. No. 34 ..... Drlg. shale 5,310 ft.
Humble O. & R. Co.'s No. 3-B M. A. Quilter, 466 ft. from N line and 330 ft. from W line of most northerly NW cor. of 300-ac. "B" lease ..... Drlg. shale 1,692 ft.
Humble O. & R. Co.'s No. 1 F. Theis, 550 ft. from S line and 584 ft. from E line of 175-ac. tract in C. N. Pillot Sur. ..... Derrick.
Humble O. & R. Co.'s No. 1 Werner ..... Drlg. shale 5,601 ft.
J. E. Mabee's No. 1 W. W. Baker, 440 ft. S of C of N line of 80-acre lease in J. House Sur. ..... Drlg. sand 5,587 ft.
Sun and Humble O. & R. Co.'s No. 1 Metzler, 34 ft. N and E of NE cor. of 2-acre graveyard in 90-acre lease in C. N. Pillot Sur. No. 632 ..... Spud.
Texas Co.'s No. 2 R. W. Hirsch, 100 ft. from N line and 364 ft. from W line of 57-ac. lease in J. House Sur. ..... Drlg. sticky shale 3,289 ft.

**ESPERSON—LIBERTY COUNTY**

General Crude Oil Co.'s No. 3 Davis, 400 ft. N of No. 2, Joseph Kokernut Sur. ..... Location.
General Crude Oil Co.'s No. 4 Davis, 400 ft. N of No. 3, Joseph Kokernut Sur. ..... Location.
General Crude Oil Co.'s No. 12 Moore's Bluff, 2,100 ft. S of N line and 2,932 ft. W of E line of survey and tract, Moore's Bluff lease ..... Drlg. shale 2,714 ft.
General Crude Oil Co.'s No. 8 Davis, 660 ft. from S and 1,000 ft. from E line of lease in D. Kokernut Sur. .... Drlg. sand 3,001 ft.

**HANKAMER—LIBERTY COUNTY**

George Devore et al's No. 1, SE Exell, 175 ft. S of Gulf's No. 1 and 165 ft. from E line of 175-ac. lease in Levi Barrow Sur. ..... Derrick.
Mirimar Oil Co.'s No. 2 Crow & Jacobs, H.&T.C. Sur. No. 21 ..... Sand showing S.W. 2,971 ft.; S.D.

**HULL—LIBERTY COUNTY**

Flynn's No. 1 Flynn, J. Devore Sur. ..... T.D. 1,500 ft.; S.D.
Gulf Prod. Co.'s No. 104 Phoenix, 2,479 ft. from W line and 1,115 ft. from S line of 300-ac. tract, in J. Devore Sur. ..... Location.
Gulf Prod. Co.'s No. 103 Phoenix ..... Drlg. shale and lime 2,173 ft.
Republic Prod. Co.'s No. 153 Dolbear, 400 ft. N and 45 deg. E from No. 151, in the J. Devore Sur. .... Drlg. shale 5,092 ft.
Republic Prod. Co.'s No. 154 Dolbear, 285 ft. NW of No. 152 and in line with No. 140 and 280 ft. SW of No. 74 ..... T.D. 2,111 ft.; sand; W.O.C.
Sun Oil Co.'s No. 7-A Carr, 200 ft. W of E line and 277 f t. S of N line of lease ..... Coring hard sand and shale 5,020 ft.
Texas Co.'s No. 7 Barrow fee, 453 ft. S and 350 ft. W of NE cor. of tract in J. Devore league ..... Reaming 5,200 ft.; T.D.

**LIBERTY COUNTY**

Mrs. I. M. Lemon Oil Co.'s No. 1 Richardson, 120 ft. E of Gulf & Humble's No. 1 Carter, in M. G. White Sur. ..... T.D. 3,882 ft.; rerun tubing. standing.

**MARKHAM—MATAGORDA COUNTY**

Hamil and Powers' No 4 Myers, 150 ft. from N, 225 ft. NW of No. 1, in Wm. Hadden Sur. ..... Drlg. 2,000 ft.
Hawkins Oil Co.'s No. 1 Hawks fee, 1,350 ft. from N line and 1,650 ft. from E line of 20-ac. lease ..... Rigging up.
Powers Prod. Co.'s No. 3 N. R. Powers, 100 ft. from N and 150 ft. E of SE¼ of Blk. No. 1 ..... Derrick.
Rio Bravo Oil Co.'s No. 1 Sisk, 550 ft. N, 650 ft. W. SE cor. of R. J. Sisk's 153-ac. tract in Lot 2, Wm. Haddon League ..... Rigging up.

**CONROE—MONTGOMERY COUNTY**

American Liberty Oil Co.'s No. 2 Allen ..... Rigged up and S.D.
Brown and Wheeler's No. 1 Walters ..... T.D. 5,100 ft.; setting screen.
Gulf Coast Drlg. & Prod. Co.'s No. 27 Keystone Mills .. T.D. 4,235 ft.; to comp.
Humble O. & R. Co.'s No. 1 Cameron ..... Drlg. shale 3,085 ft.
Humble O. & R. Co.'s No. 5 B. E. Jones ..... T.D. 5,125 ft.; comp. 46 bbls. hr.; ½-in. choke.
Humble O. & R. Co.'s No. 25 Keystone Mills ..... Drlg. sand 1,863 ft.
Humble O. & R. Co.'s No. 28 Keystone Mills ..... T.D. 5,125 ft.; comp. 101 bbls. hr.; ½-in. choke.
Humble O. & R. Co.'s No. 7-D Keystone Mills ..... T.D. 5,124 ft.; comp. 87 bbls. hr.; ½-in. choke.
Humble O. & R. Co.'s No. 39 Madeley ..... Drlg. shale 2,938 ft
Humble O. & R. Co.'s No. 66-A South Texas Dev. Co. .. Drlg. shale 4,569 ft.
Humble O. & R. Co.'s No. 68-A South Tex. Dev. Co. .. Drlg. shale 4,256 ft.
Houston-Tidewater Oil Co.'s No. 10 Hammond, Stewart Sur. ..... T.D. 5,144 ft.; comp. 21 bbls. hr.; ¼-in. choke.
Pine Tree Oil Co.'s No. 1 South Texas ..... Shale 5,182 ft.; W.O.C.
Showers & Moncrief's No. 3 B. Dunn ..... Drlg. shale 4,225 ft
Sun Oil Co.'s No. 14 Keystone Mills, 1,760 ft. from N line, 2,274 ft. from W line of lease in A. Steele Sur... Rigging up.
Texas Co.'s No. 8 Moody, 2,330 ft. from N line, 466 ft. from W line of tract in Ransom House Sur. ..... T.D. 5,134 ft.; prep. to comp.
Tide Water Oil Co.'s No. 1 Eichletz-McKibben, 592 ft. from N line and 19 ft. from E line, which is Tide Water's W line on the Eichletz lease, in L. Smith Sur. ..... Spud.

**PORT NECHES—ORANGE COUNTY**

Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 200 ft. S of NE cor. of lease .. T.D. 7,268 ft.; P.B. to 3,173 ft.; swabbing down.
Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. ..... T.D. 6,708 ft.; prep. to set whipstock and sidetrack at 5,000 ft.; milling 5,052 ft.

**LIVINGSTON—POLK COUNTY**

Gem Oil Co.'s No. 1 Davis Holmes, 350 ft. N and E from most northerly SE cor. of A. E. Munson tract in A. Viesca Sur. ..... Rigging up to deepen.
H. B. Owenby's No. 1 Duff, 78 ft. N of S line, 656 ft. W of E line of lease in A. Viesca Sur. ..... T.D. 4,350 ft.; S.D.
Werby et al's No. 1 Dick and Failing, 1,421 ft. W of E line and 330 ft. N of S line of tract in A. Viesca Sur. ..... T.D. 531 ft.; W.O.C.

**GRETA—REFUGIO COUNTY**

Atlantic & Stanolind's No. 6-A J. J. O'Brien, Ximines Sur. ..... T.D. 5,929 ft.; W.O.C.
Floboots Oil Co.'s No. 2-D J. M. O'Brien, E. H. Winfield Sur., 466 ft. S N line and midway E and W lines, Blk. 12 ..... Drlg. shale 3,050 ft.
Floboots Oil Co.'s No. 2-E J. M. O'Brien, E. H. Winfield Sur., 466 ft. S N line and midway E and W lines, Blk. 10 ..... Coring shale 4,341 ft.
Floboots Oil Co.'s No. 2-F O'Brien, Peoples Sur., 466 ft. S N line and midway E and W lines, Blk. 8 ..... Drlg. sandy shale 2,688 ft.
Floboots Oil Corp.'s No. 2-C J. M. O'Brien, 466 ft. from S and E lines of Block 15, Smith Subd., Winfield Sur. ..... T.D. 4,380 ft.; comp. 250 bbls. day; ¼-in. choke; tubing pressure 150 lbs.; cag. pressure 1,150 lbs.
Floboots Oil Co.'s No. 4-C J. M. O'Brien, 503 ft. from E line and 466 ft. from S line of Blk. 8, Peoples Sur... W.O.C.; T. D. 4,384 ft.
Hewitt & Dougherty's No. 7 Lambert, 466 ft. from S line and 503 ft. from E line of Lot 5, Hardwick Sur. T.D. 2,945 ft.; blew out.
Hewitt & Dougherty's No. 23 M. F. Lambert 466 ft. from S line and 507 ft. from E line of Blk. 16, Hardwick Sur. ..... Drlg. shale 219 ft.
Houston Oil Co.'s No. 14 W. J. J. Heard, 550 ft. NW of No. 5, and 330 ft. NE of SW line of lease ..... Coring 4,944 ft.
Houston Oil Co.'s No. 15 Rooke, 160 ft. S along E line along NE cor., 150 ft. W at right angles ..... T.D. 4,935 ft.; W.O.C.
Humble O. & R. Co.'s No. 5 Fannie Heard, 1,490 ft. from S line, 450 ft. from W line of 337-ac. tract in Crunk Sur. ..... Drlg. lime 2,860 ft.
Humble O. & R. Co.'s No. 4 Fannie Heard, 1,218 ft. from E line, 466 ft. from N line of lease in Ximines Sur. ..... T.D. 5,775 ft.; fishing.
Humble O. & R. Co.'s No. 6 J. F. B. Heard ..... T.D. 4,382 ft.; W.O.C.
Humble O. & R. Co.'s No. 7 J. F. B. Heard, 1,107 ft. N of No. 7 and 466 ft. from W line of 500-ac. lease in Peoples Sur. ..... Drlg. hard sand 2,067 ft.
Stanolind Oil & Gas Co.'s No. 2-A J. M. O'Brien, Peoples Sur., begin at NE cor. of "A" lease, thence W along N line 1,509 ft., thence S at right angles 466 ft., S offset to No. 4-B ..... S.D. 4,384 ft.
United Prod. Co.'s No. 15 Fox, 330 ft. W of No. 2-A in Wm. Hews and L. Brown Sur. ..... T.D. 5,747 ft.; to P.B. to 4,400 ft.; sidetracking 5,400 ft.
United Prod. Co.'s No. 14 W. J. Fox et al, 466 ft. from N line and 1,060 ft. W of No. 11 on 848-acre tract in Wm. Hews and L. Brown Sur. ..... Drlg. 5,950 ft.
United Prod. Co.'s No. 8 Lambert ..... Drlg. shale 4,515 ft.
United Prod. Co.'s No. 9 Lambert, 466 ft. S line and 507 ft. E line of Blk. 17, H.&D. Subd. of Hardwick Sur., Abst. 159 ..... T.D. 4,350 ft.; W.O.C.

CLAY CREEK—WASHINGTON COUNTY

**Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease** ..... Drlg. 4,617 ft.
**Sun Oil Co.'s No. 5 Schlettman** ..... T.D. 1,340 ft.; W.O.C.

## SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

**Shell Pet. Corp.'s No. 3 State** ..... T.D. 6,002 ft.; W.O.C.
Shell Pet. Corp.'s No. 18 Watkins ..... Building derrick.
Shell Pet. Corp.'s No. 19 Watkins fee, 1,260 ft. S, 2,185 ft. W of NE cor. Sec. 18-12-12 ..... Location.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Humble O. & R. Co.'s No. 1 Joseph Berb, located on 100-acre tract lease in Section 21-8s-3e, about a mile and a half NW of the producer ..... Location.
Shell Pet. Corp.'s No. 1 E. M. Eliaboutrout, in Section 23-8s-3e. 1¼ mile due N of discovery well ..... **Location.**
Standard Oil Co. of Kans.' No. 1 Joseph Mouton ..... Drlg. 1,260 ft.
Superior Oil Co.'s No. 1 J. Sidney Arceneaux et al, 1,665 ft. N and 439 ft. W of SE cor. of Sec. 28-8s-3e ..... Drlg. sand and shale 6,648 ft.
Superior Oil Co.'s No. 1 U. T. Iseringhauser, 1,381 ft. E and 502 ft. S of NW cor. of Sec. 35-8s-3e ..... T.D. 7,850 ft.; running csg.
Superior Oil Co.'s No. 1 Leo E. Kahan et al, 2,381 ft. N and 468 ft. W of SE cor. of Sec. 33-8s-3e ..... T.D. 6,898 ft.; P.B. to 1,451 ft.; W.O.C.
Superior Oil Co.'s No. 1 Elize Mire, 890 rt. S and 597 ft. W of NE cor. of Sec. 33-8s-3e ..... Coring hard sandy shale 7,600 ft.
Superior Oil Co.'s No. 1 Looanstie Richard, 2,878 ft. S and 465 ft. W of NE cor. of Sec. 34-8s-3e ..... Drlg. sand and shale streaks 7,-145 ft.
Superior Oil Co.'s No. 1 Marcellus Savoie, 2,201 ft. S and 761 ft. W of NE cor. of Sec. 27-8s-3e ..... Drlg. shale 5,827 ft.

CAILLOU ISLAND—TERREBONNE PARISH

Texas Co.'s No. 12 State Caillou Island, 2,420 ft. E and 73 ft. S of NW cor. of Sec. 20-23s-20e ..... Building derrick.
Texas Co.'s No. 13 State Caillou Island, 500 ft. SW of No. 11 well ..... Drlg. sand 3,970 ft.

CALCASIEU LAKE—CAMERON PARISH

Texas Co.'s No. 10-A State, 16,855 ft. W and 3,270 ft. N of NE cor. Sec. 1-14s-9w in Twp. 13s-9w ..... Drlg. lime 5,508 ft.

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 4 School Land, 2,891 ft. W and 150 N of SE cor. of Sec. 16-4s-11w ..... Derrick.
Humble O. & R. Co.'s No. 8 Cameron Meadows, 2,896 ft. W, 150 ft. S of NW cor. Sec. 21-14s-13w ..... Drlg. shale 4,225 ft.
**Humble O. & R. Co.'s No. 1-B Cameron Meadows, 250 ft. W and 2,640 ft. S of NE cor. of Sec. 34-14s-14w** ... Drlg. shale 4,461 ft.
Texas Co.'s No. 1 Miami Corp. ..... Drlg. shale 4,792 ft.

CHOCTAW FIELD—IBERVILLE PARISH

Standard Oil Co.' of Louisiana's No. 6 Myrtle Grove Wilbert, Sec. 52-9s-11e ..... Drlg. gumbo 2,552 ft.

EDGERLY—CALCASIEU PARISH

Union Sulphur Co.'s No. 1 La Prairie Narrone, 1,061 ft. N, 250 ft. W of SW cor. SW Sec. 21-9s-11w ..... Salt 6,520 ft.; T.D.; abd.

FOUR ISLAND—TERREBONNE PARISH

Texas Co.'s No. 3 State, Four Island ..... T.D. 1,612 ft.; salt; abd.
Texas Co.'s No. 6 State, Four Island ..... Dredging canal.
Texas Co.'s No. 7 State, Four Island ..... Dredging canal.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 11 Garden Island, 4,191 ft. S and 1,504 ft. W of NE cor. Sec. 107-23s-32e ..... T.D. 1,675 ft.; bailing.

GUEYDAN—VERMILLION PARISH

**Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w** ..... T.D. 7,525 ft.; reaming.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 2 Hanszen, 400 ft. W and 200 ft. S of No. 1 in Sec. 14-12s-10w ..... T.D. 6,462 ft.; standing.
H. E. Dawton's No. 1 Kaugh ..... Derrick.
Gulf Prod. Co.'s No. 14-A Irwin, 300 ft. SE of No. 13-A ... T.D. 6,850 ft.; prep. to bring in.
Wilfred LaHay's No. 1 Roux, Sec. 36-12s-10w ..... Drlg. shale 3,986 ft.; no report.
Sutton Oil Co.'s No. 1 Portier, 2,930 ft. W and 1,220 ft. N of SE cor. of Sec. 22-12s-10w ..... Rigging up.
**Texas Co.'s No. 10-B State, 1,000 ft. E, 200 ft. N of NE cor. Sec. 13-12s-10w** ..... T.D. 7,459 ft.; comp. 800 bbls. dly.
Texas Co.'s No. 12-B State, 500 ft. SE of No. 10-B or 1,360 ft. E and 149 ft. S of NE cor. of Sec. 13-12s-10w ..... Derrick.
**Union Sulphur Co.'s No. 1 Barbee est., 1,720 ft. N line, 330 ft. E of SW cor. Sec. 12-12s-10w** ..... T.D. 7,986 ft.; sidetracking 6,-500 ft.
**Union Sulphur Co.'s No. 9 Humble, 300 ft. E and slightly N of No. 1 well, or 830 ft. N and 270 ft. E of the SW cor. of Sec. 12-12s-10w** ..... Drlg. rock 5,684 ft.
Yount Lee Oil Co.'s No. 11 Gulf Land, Sec. 14-12s-10w .. T.D. 7,044 ft.; sidetracked to 6,-090 ft.; flowing 100 bbls. daily by heads.
Yount Lee Oil Co.'s No. 14 Gulf Land ..... Drlg. 4,995 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 2 Caffal ..... Drlg. sticky shale 2,732 ft.
Barnsdall Oil Co.'s No. 6 Fontenot, 330 ft. from N and W lines of lease in Sec. 7-9s-6w ..... Drlg. shale 4,366 ft.
Magnolia Pet. Co.'s No. 3 Gillison, 990 ft. W and 200 ft. N of SE cor. of lease in Sec. 12-9s-7w ..... Drlg. sticky shale 5,362 ft.
**Magnolia Pet. Co.'s No. 7 Walt** ..... T.D. 1,564 ft.; W.O.C.
**Magnolia Pet. Co.'s No. 8 Walt, 998 ft. W and 330 ft. N of SE cor. of 160-acre lease** ..... T.D. 6,896 ft.; comp. 840 bbls. dly.
**Shell Pet. Corp.'s No. 2 Ardoin** ..... T.D. 7,337 ft.; P.B. to 7,020 ft.; drlg. cement 7,025 ft.
**Shell Pet. Corp.'s No. 8 Heyd** ..... Drlg. shale 6,724 ft.
**Shell Pet. Co.'s No. 9 Heyd, 998 ft. W and 330 ft. S of NE cor. of 320-acre lease** ..... Drlg. shale 6,808 ft.
**Shell Pet. Co.'s No. 4 E. D. Stafford, 990 ft. S and 330 ft. W of NE cor. of lease** ..... T.D. 6,655 ft.; W.O.C.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 14 Housierre-Latrielle, 260 ft. N of No. 13, Sec. 47-9s-2w ..... Rig.

LAKE BARRE—TERREBONNE PARISH

**Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20** ..... T.D. 3,690 ft.; S.D.
Texas Co.'s No. 11 L.L.&E., Sec. 30-21s-20e ..... Drlg. sand 1,345 ft.
**Texas Co.'s No. 24 Lake Barre** ..... T.D. 2,611 ft.; shale; S.D.
**Texas Co.'s No. 28-D State Lake Barre, 300 ft. SW from No. 27 in Sec. 40-21s-19w** ..... Drlg. 3,873 ft.; no report.

LAKE PELTO—TERREBONNE PARISH

**Texas Co.'s No. 11 Lake Pelto, 1,600 ft. SW of No. 5** ... Drlg. shale 2,498 ft.
**Whitstone O. & G. Co.'s No. 1 Buckley, 300 ft. S and E. of NW cor. SW SW Sec. 35-19s-16e** ..... T.D. 2,070 ft.; rebldg. derrick.

LEESVILLE—LAFOURCHE PARISH

**Ben Coil and Texas Co.'s No. 1 LaFourche** ..... Drlg. shale 4,546 ft.
**Emerald Pet. Co.'s No. 3 State of Louisiana** ..... Comp. 70 bbls. hr.
Emerald Pet. Corp.'s No. 4 State of Louisiana ..... Rigging up.
**Emerald Pet. Corp., No. 5 State of La., 1,878 ft. N of No. 1 well in Sec. 26-21s-22e** ..... Rigging up.
**Emerald Pet. Corp.'s No. 6 State of Louisiana** ..... Comp. 40 bbls. hr.
Emerald Pet. Corp.'s No. 7 State of Louisiana, 1,078 feet N of No. 1 ..... **Location.**
Emerald Pet. Corp.'s No. 8 State of Louisiana, 455 ft. N of No. 1 ..... Derrick.
Emerald Pet. Corp.'s No. 9 State of Louisiana, 660 ft. S of No. 1 ..... Derrick.
**Gulf Ref. Co.'s No. 5 L. Bernard** ..... T.D. 3,718 ft.; comp. 528 bbls. dly.
**Frank L. Hill's No. 1 Bernard, 1,422 ft. N and 808 ft. E of SW cor. Sec. 26-21s-22e** ..... Drlg. shale 1,400 ft.
Lincoln Oil Co.'s No. 1 Constantine ..... T.D. 3,836 ft.; W.O.C.
**Texas Co.'s No. 14 L.L.&E.** ..... Oil sand 4,064 ft.; T.D. comp. 900 bbls. day; ¼-in. choke.
**Texas Co.'s No. 16 L.L.&E.** ..... Drlg. shale 4,359 ft.
**Texas Co.'s No. 17 L.L.&E., 1,821 ft. S and 122 ft. E of NW cor. of Sec. 27-21s-22e** ..... Drlg. shale 3,596 ft.

LOCKPORT—CALCASIEU PARISH

**Magnolia Pet Co.'s No. 12 Bordages, 966 ft. W and 93 ft. N of SE cor. N½ NE Sec. 8-10s-9w** ..... Derrick.
**Magnolia Pet. Co.'s No. 26 Miller, 480 ft. S, 780 ft. E NW cor. SW¼ NW¼ Sec 9** ..... T.D. 4,386 ft.; prep. to set screen.
Magnolia Pet. Co.'s No. 34 Miller, Sec. 9-10s-9w ..... Foundation.
Strake Oil Co.'s No. 1 Miller, 500 ft. due N of Yount Lee's No. 1 Miller, Sec. 8-10s-9w ..... T.D. 6,695 ft.; S.W.; to deepen.
**Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract** .. T.D. 7,468 ft.; sidetracking 4,-600 ft.
**Union Sulphur Co.'s No. 6 Moss, between Nos. 2 and No. 5** ..... Drlg. hard shale and lime 5,984 ft.

FORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 6 Wilson-Cochran ..... T.D. 3,000 ft.; stuck D.S.; sidetracking 2,169 ft.
**Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 660 deg. tract. Sec. 4-6s-5e** ..... Sand 3,332 ft.; fishing.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 26 United Land ..... Drlg. sandy shale 4,348 ft.

STARKS—CALCASIEU PARISH

Gulf Ref. Co.'s No. 35 Lutcher Moore, Sec. 19-9s-8w ... Spud.
**Union Sulphur Co.'s No. 5 Industrial Lbr. Co., 300 ft. S of No. 4, Sec. 30-9s-12w** ..... T.D. 5,493 ft.; anhydrite; abd.

SULPHUR—CALCASIEU PARISH

**Union Sulphur Co.'s No. 776 fee** ..... Coring sand 4,543 ft.
**Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W of C Sec. 29-9s-10w** ..... T.D. 6,103 ft.; drlg. sand 4,982 ft.
**Union Sulphur Co.'s No. 794 fee** ..... T.D. 5,087 ft.; washing.
**Union Sulphur Co.'s No. 795 fee** ..... Location.
**Union Sulphur Co.'s No. 796 fee** ..... T.D. 2,144 ft.; washing.
**Union Sulphur Co.'s No. 797 Fee, 1,682 ft. W, 418 ft. N of Center of Sec. 29-9s-10w** ..... Drlg. rock 1,907 ft.
**Union Sulphur Co.'s No. 798 Fee, 673 ft. N, 575 ft. W of center of Sec. 29-9s-10w** ..... Drlg. broken rock 2,169 ft.
**Union Sulphur Co.'s No. 799 fee** ..... Drlg. wtr. sand 2,718 ft.
**Union Sulphur Co.'s No. 1 Bernard Ulrich, 75 ft. out of SW cor. Sec. 19-9s-10w** ..... T.D. 5,712 ft.; abd.

SWEET LAKE—CAMERON PARISH

**Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 10. Sec. 12-13-3w** ..... T.D. 7,439 ft.; prep. to start up.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 72 G. N. G., 643 ft. E, 50 ft. S, NW cor. NE SE Sec. 32-10s-12w ..... T.D. 3,276 ft.; hard shale; washing to bottom.
Tri-Oil Co.'s No. 1 Matilda Gray, 38 ft. W, 35 ft. N, of SE cor. NE SW NE Sec. 33-9s-12w ..... T.D. 3,535 ft.; prep. to deepen
Vinton Oil Co.'s No. 6 Gray ..... T.D. 3,412 ft.; comp. 35 bbls. dly.
Wilson Broach Co.'s No. 11 Wilson strip (workover) ..... Sand 3,557 ft.; S.D. orders.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 9 Wilburn ..... Location.

## MISCELLANEOUS WILDCATS

### TEXAS

ANGELINA COUNTY

Thayer et al's No. 1 Dearmond, J. T. Peavy Sur., 2½ miles SE of Zavalla ..... Hard lime 1,915 ft.; T.D.; F.A.

BRAZORIA COUNTY

Amerada Pet. Corp.s No. 1 Houston Farm Dev. Co., 1,414 ft. N, 316 ft. W of SE cor. of L. Bachelder Sur. ..... Rigging up.
C. & R. Dev. Co.'s No. 1 National Life Co., 340 ft. from W line and 340 ft. from N line of 100-acre tract out of W end Nos. 3 and 4 in Henry Austin League No. 4, Abst. No. 12 ..... Rigging up; S.D.
Jack Clark, tr's No 1 J. M. Spear, 150 ft. from N line and 150 ft. from W line of Lot No. 4, in Pickney Sur. ..... T.D. 1,800 ft.; prep. to deepen.
**Danciger O. & R. Co.'s No. 3-A Hunt, 2,100 ft. from E, 2,000 ft. from S lines of Hunt's 1,000-ac. tract in W. C. Carson Sur.** ..... T.D. 6,797 ft.; P.B. 1,172 ft.; S.D.
**Danciger Oil & Ref. Co.'s No. 1-B Hunt, 1,400 ft. from NW line and 1,750 ft. from NE line of 1,600-acre tract in W. C. Carson Sur.** ..... Abd. 6,875 ft.
**Danciger Oil & Ref. Co.'s No. 1 Stark-Brown, 330 ft. out of most easterly NE cor. of lease in Perry & Austin Sur.** ..... Drlg. shale 5,250 ft.
Gillock Pet. Co.'s No. 1 Frank Truksa, 200 ft. from S. and 1,000 ft. from E lines of 75-ac. tract, Sec. 7, H.T.&B.R.R. Sur. ..... Building derrick.
Holt et al's No. 1 Griffith, J. B. Bailey Sur. ..... Drlg. 4,250 ft.

BRAZOS COUNTY

M. S. Broach's No. 1 Buck Wallace, 1,000 ft. from S line, 400 ft. from W line of 251-ac. tract in G. W. Singleton Sur. ..... S.D. 410 ft.
**H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isack Curil Sur.** ..... **Cmtd. surface csg. 30 ft.**
**F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line** ..... T.D. 2,500 ft.; **fighting gas.**
**D. W. Young, Jr.'s (H. L. Bleam) No. 1 Harrison, 300 ft. from S and W lines of lease in J. D. Allcorne Sur.** ..... Spudded and S.D.

BURLESON COUNTY

**Southern Seaboard Co.'s No. 1 J. H. Coulter, 9,400 ft. from SW line and 2,200 ft. from NW line of 1,176-acre tract in SE cor. of County in A. Kennon Sur.** .. Derrick.

CALHOUN COUNTY

**Continental Oil Co.'s No. 1 American Nat. Realty Co., C of NE of Sec. 4, Blk. C** ..... Drlg. shale 4,201 ft.
Herman Heep's No. 3 Welder ..... Location.
Herman Heep Oil Co.'s No. 1-B F. Welder ..... Drlg. 5,282 ft.
J. H. Meek et al's No. 1 R. Adamans, C of NW line of Sec. 45, 2½ miles NE of McCamey ..... Spud.

CHAMBERS COUNTY

**John H. Carreker's No. 1 B. Weaver, 404 ft. out of SE cor. of lease in A. Weaver Sur.** ..... Drlg. gumbo 2,550 ft.

COLORADO COUNTY

**Coyle-Concord Oil Co.'s No. 1 Nelson, 3,200 ft. SE of NW cor. of section, 2,200 ft. SW at right angles in I.&G.N. Sur.** ..... T.D. 4,052 ft.; R.U. and S.D.
**Union Central Oil Co.'s No. 1 Mann, 620 ft. from W line and 330 ft. from N line of 20-acre tract in J. L. Dugat Sur.** ..... Location.

FAYETTE COUNTY

**Colorado Oil Co.'s No. 1 Anders** ..... Drlg. sand and shale 2,806 ft.

FORT BEND COUNTY

Mills Bennett's No. 1 Luschner, 3,720 ft. from N line of survey and 550 ft. from W line of lease, in T. Habermachner Sur. ..... Drlg. sandy shale 3,398 ft.
**Joe Moffat's No. 1 Blakly, 100 ft. from N and W lines of Lot 4, Block C** ..... T.D. 417 ft.; S.D.
J. E. Seiber's No. 1 J. B. Farmer, 150 ft. out of most southerly cor. of 50-ac. tract in Jas. Scott Sur. ... Drlg. gumbo 2,016 ft.
W. A. Shafer et al's No. 1 V. B. Bortash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur. ..... Moving in material.
Vico Oil Co.'s No. 1 H. R. Darst, 5,690 ft. N of S line and 685 ft. W of E line of E. Powell Sur. .... Derrick.
Wilks et al's No. 1 Norris, 300 ft. W and 1,352 ft. S of N cor. of 525-ac. tract (5 miles S of Needville) .. Derrick.

GALVESTON COUNTY

**George K. Spoor's No. 1 Maco Stewart, 1,626 ft. N of SE cor. of Alex Farmer Sur. and 1,175 ft. E in W. K. Wilson Sur. (4 miles S of Dickinson)** ..... T.D. 6,577 ft.; reinforcing derrick.
**Humble O. & R. Co.'s No. 1 Maco Stewart, C of E and W lines of 400-acre tract in John Sellars Sur., S of Dickinson Bayou, 3 miles N of Spoor well** ..... Drlg. shale 4,425 ft.

### GRIMES COUNTY

**Clark & Dodd's No. 1 Murry.** 150 ft. W line, 300 ft. S line, Anderson Sur. ..... S.D. 1,305 ft.

**W. D. Roan et al's No. 1 D. C. Kelly,** 1,532 ft. from N line and 168 ft. from E line of U. Sanders Sur., near Carlos ..... Rigging up.

### HARDIN COUNTY

**Wilcox Oil & Gas Co.'s No. 1 Sternberger,** 1,328 ft. N of S line and 1,311 ft. W of E line of C. Dorsey Sur. No. 1 ..... Drlg. shale 3,228 ft.

### HARRIS COUNTY

Emerald Pet. Co.'s No. 1 Griffith ..... Drlg. 3,655 ft.

**C. C. Foster and others' No. 1 H. K. Johnson,** 2,000 ft. from S line and center of E and W lines of G.C.&S.F. Sur. ..... Spud and S.D.

General Crude Oil Co.'s No. 1 Rorick, est. 5,606 ft. S of N line of survey and 1,546 ft. W of E line of 1,426-acre tract in John C. Ogburn Sur. ..... Set surface csg. 750 ft.

H. H. Givans' No. 1 F. B. Bender, 2,640 ft. from S line and 4,800 ft. from E line of Geo. Fisher Sur. ..... S.D. at 335 ft.

**Imperator Oil Co.'s No. 1 Brooks Est.,** 4,400 ft. S and W of NE cor. of R. & R. Vince Sur. ..... Derrick.

**J. E. Seiber's No. 1 Tyrell & Gareth,** 2,800 ft. from E line and 2,400 ft. from N line of survey, Lot 18, Blk. 20, Highland Subd., Ashbell Smith Sur. ..... T.D. 6,960 ft.; S.D.

**Loring Oil Co.'s No. 1 Westmoreland,** Lot 3, Blk. 33, Westmoreland Addition ..... Drlg. 3,700 ft.

**W. U. Paul's No. 1 E. M. House,** 2,200 ft. N and 1,000 ft. E of NE cor. of E. Benson Sur. in M. Magruder Sur. ..... Set 10-in. at 1,000 ft.; S.D.

Southland Oil Co.'s No. 1 Galvey, SE cor. Sec. 4, Blk. 1, H.&T.C. Sur. ..... Rigging up.

### JACKSON COUNTY

**Encio Gas Co.'s No. 1 J. H. Drummond,** 330 ft. out of most easterly NE cor. of Drummond 499-ac. tract ..... Spud.

**Encio Gas Co.'s No. 1 Siedel & Simmons,** 150 ft. from SW line or 300 ft. NE at right angles from No. 1 Toney, in Raymond Musquiz Sur. ..... T.D. 5,581 ft.; tested S.W.; P.B. to 5,500 ft.; to side track and core sand again.

Imperator Oil Co.'s No. 1 Dutton, S center of Lot No. 11, Blk. 25, 450 ft. S of R.R. and 1,350 ft. W line of townsite, Ray Muskins Sur. ..... Location.

### JEFFERSON COUNTY

Gulf Prod. Co.'s No. 3 I. W. Junker, 700 ft. W. 350 ft. S of NE cor. of 260-ac. tract in W. H. Smith League ..... Drlg. sand rock 3,220 ft.

**Sun Oil Co.'s No. 1 H. Long,** 1,500 ft. N line, 990 ft. E line of lease ..... T.D. 7,138 ft.; fishing.

### LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4 ..... Location.

**Extension Oil Co.'s No. 1 J. A. Lovett,** 300 ft. from E and 600 ft. from S line of lease, P. P. Deevers Sur. ..... T.D. 2,590 ft.; S.D.

**Gulf Prod. Co.'s No. 2 Kirby, John Pleasants Sur.,** 1,866 ft. S of No. 1 ..... Hard shale 8,734 ft.; P.B. to 5,300 ft.; drlg. gray sand 5,892 ft.

**Gulf Prod. Co.'s No. 4-C Kirby,** 1,700 ft. due W of No. 1 discovery well in John Pleasant Sur. ..... Drlg. shale 4,815 ft.

Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 500 varas from N line of Samuel Strong Sur. ..... Drlg. shale 1,560 ft.; no report.

A. L. Maxwell's No. 1 M. D. Hindliff, 300 ft. from E line and 1,000 ft. from N line of H.&T.C. Sur. No. 150 ..... Location.

**Thomas et al's No. 1-A Ricks,** 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur. ..... T.D. 5,058 ft.; D.S. test 5,025 ft., ¼-in. choke, 5 min., 3 thribbles mud; S.D. orders.

### MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Robbins ..... Drlg. hard lime 3,507 ft.

**Dr. Griffith's No. 1 fee,** 3,000 ft. from N line and 3,000 ft. from W line of Wm. E. Bell Sur. ..... Rigged up and drlg. wtr. well.

**United North & South Dev. Co.'s No. 1 Unit 4, Buckeye farm, J. C. Keller league,** 214 ft. N line and 202 ft. E line of lease ..... T.D. 7,871 ft.; tested S.W.; tried to make Schlumberger test and lost weight; fishing.

**United North & South Dev. Co.'s No. 1 Unit No. 58,** 250 ft. N and 200 ft. W of SE cor. of Unit No. 58 ..... Rigging up.

### MONTGOMERY COUNTY

**Baker et al's No. 1 Benker, D. James Sur.** ..... Whipstocked and drilled to 4,750 ft.; D.S. test in 10 min.; built up 50 lbs. pressure and showed 1 joint oil and mud and 30 thribbles S.W.; S.D.; old T.D. 4,921 ft.

Brown & Wheeler et al's No. 1 Jones, 440 ft. out of NW cor. of S 175 acres of 350-ac. tract ..... Location.

Deering & Frazier's No. 1 L. Hicks, T. Taylor Sur., 660 ft. S and W of NE cor. of 565-acre tract ..... Drlg. hard shale 4,200 ft.

Humble O. & R. Co.'s No. 1 Anna M. Platte, 466 ft. S and 1,100 ft. W of NE cor. of 100-ac. tract in Wm. Barker Sur. ..... Location.

### ORANGE COUNTY

**Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 20-acre tract** ..... S.D. 1,400 ft.

Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A ..... T.D. 5,065 ft.; S.D.

### POLK COUNTY

**Alpha Pet. Co.'s No. 1-B Kirby & West,** 2,000 ft. E of Schwab's No. 2 and 150 ft. N of S line of 100-acre tract and survey in G. S. Thomas Sur. ..... T.D. 5,533 ft.; abd.

**Howard Dailey et al's No. 1 Z. B. Knox,** 1,450 ft. W and 1,920 ft. S of NE cor. of F. Chairs Sur., 1¼ mile NE of Corrigan ..... Spud and S.D.

### REFUGIO COUNTY

**C. B. Bunte's No. 2 Rook,** 12,400 ft. from W and 11,500 ft. from N line of Antonio De Lavina Sur. ..... T.D. 6,004 ft.; abd.

**Bunte's No. 3 Rooke, Antonio De Lavina Sur.** ..... T.D. 6,071 ft.; abd.

**Cox et al's No. 1 F. W. Bissett, J. Crockett Sur.** ..... T.D. 5,775 ft.; no report.

**Heard-Holland Oil Co.'s No. 1 Peck,** 346 ft. N and W out of NW and SW of Bonnie View Subd. ..... T.D. 5,351 ft.; D.S. test 5,330-37 ft., 11 mins., 400 lbs. pressure, ¼-in. choke top and 5/16-in. choke on bottom; D.S. test 5,337-51 ft. showed 220 lbs. pressure 11 mins., and 100 ft. mud cut with gasoline and some fresh wtr.; prep. to set 7⅝-in. csg. at 5,320 ft.

**S. Jeffries' No. 1 James F. Power,** 759 ft. from N and 1,812 ft. from E lines of 500-acre lease in J. J. Garza and J. Vidaurri Sur. ..... T.D. 4,523 ft.; S.D.

Nesral-Baymore's No. 2 E. Heard, Ximines Sur. ..... Drlg. shale 5,065 ft.

Quintiana's No. 1 Thos. O'Connor, 8 miles NE of town of Refugio and 3 miles SE of Greta Field ..... T.D. 5,575 ft.; S.L.M. sand 5,569-75 ft.; S.D. for storage.

Standard Oil Co. of Kansas' No. 1 Thos. O'Connor, Crunk Sur. ..... Top sand 5,938 ft.; T.D. 5,947 ft.; prep. to bring in.

### SAN AUGUSTINE COUNTY

**Fidelity Exploration Co.'s No. 1 Bryan & Flourney,** 1,926 ft. from N and 725 ft. from E lines of Sec. 14, S.P.R.R. Sur. ..... T.D. 2,005 ft.; S.D.; moving in heavy rig to drill to Woodbine.

### SAN JACINTO COUNTY

**Darby Jones' No. 1 McBee** ..... T.D. 2,985 ft.; S.D.

Phillips Pet. Co.'s No. 1 Foster Lbr. Co., 330 ft. out of NE cor. of Geo. Taylor Sur. ..... Drlg. shale 2,800 ft.

Turnbull & Irwin's No. 1 Peoples State Bank, 1,360 ft. E of SW cor. of Peoples State Bank fee in L. D. Martinez Sur. ..... Drlg. 1,750 ft.

### TYLER COUNTY

Boone-Wallace & Lane's No. 1 Cruse ..... Drlg. shale and boulders 666 ft.

### VICTORIA COUNTY

**C.R.&G. Drlg. Co.'s No. 1 R. C. Roos,** 486 ft. from N line and 1,666 ft. from E line of tract in M. A. Castanon Sur. ..... T.D. 6,030 ft.; abd.

Gulf Prod. Co.'s No. 6 Keeran, begin at intersection of R.R. and SW line of survey, thence NE along R.R. 6,257 ft., thence NW at r/a 2,539 ft. in the M. De Leon Sur. ..... Drlg. gray shale 1,203 ft.

Humble O. & R. Co.'s No. 1 McFadden est., 2,000 ft. S 15 deg. W of Lion O. & R. Co.'s No. 1 McFadden in C. O. Edwards Sur. ..... Rigging up.

Humble O. & R. Co.'s No. 1 Mitchell, 1,401 ft. from NE and NW lines of 5,000-acre tract in E. Benavides Sur. ..... Drlg. 5,600 ft.

Humble's No. 1 Agnes Murphy, begin NE cor. of survey thence SW along SE line 33,900 ft., thence NW 3,600 ft. at R/A in C. De LaGarza Sur., Abst. 46 ..... Drlg. sandy shale 1,975 ft.

Petrol Corp.'s No. 1 John Machaiic, 1,320 ft. out of S cor. of 135-acre tract, Rafael Mancha Sur. ..... T.D. 2,875 ft.; P.B. to 2,850 ft.; jetting 125 bbls. daily.

Quintana Oil Co.'s No. 1 McCormic, 500 ft. SW line, 500 ft. NW line of survey in most westerly NW cor. S.A.&M.G. Sur. No. 3 ..... T.D. 7,400 ft.; to deepen.

**Texas Co.'s No. 2 McFaddin,** 9,150 ft. S and 200 ft. E at right angles out of NW cor. of C. M. B. Hoyt Sur. ..... Drlg. sand 3,068 ft.; top sand 3,057 ft.

### WALLER COUNTY

**L. W. Capps and C. J. Sloan's No. 1 Vaughn,** 1,200 ft. N of Kirby's No. 1 Vaughn, J. MacFarland Sur. No. 46 ..... T.D. 2,900 ft.; S.D.

### WHARTON COUNTY

**Pure Oil Co.'s No. 2 Wallace Houston,** 1,511 ft. SW, 466 ft. SE of N cor. of Wallace Houston 160-ac. tract, in the T. W. Heard Sur. No. 28, Abst. 509.... T.D. 5,144 ft.; D.S. test at 5,094 ft.; open 22 min. and started flowing 24.9 gravity; ¾-in. choke bottom; ¼-in. choke top.

Pure Oil Co.'s No. 2 Chas. T. Kountze, 2,310 ft. at R/A from NW line and 990 ft. at R/A from SW line of 280-ac. tract in Morris & Cummings Sur. No. 19.. Drlg. shale 300 ft.

**Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25,** 990 ft. out of SW cor. of 160 acres ..... T.D. 8,218 ft.; washing down.

## SOUTH LOUISIANA

### ACADIA PARISH

**Edwards Drlg. Co.'s No. 1 Daigle,** NE cor. of SE of Sec. 24-7s-1e ..... Coring 4,750 ft.

**Rhodes Drlg. Co.'s No. 1 Latrell** ..... S.D. 2,280 ft.

### AVOYELLES PARISH

**Hass & Stokes' No. 1 Hass,** from NE cor. SE Sec. 28 go along E line of Sec. 28 2,486 ft. to point on highway, thence 84° E on highway for 336 ft., thence N 87° E for 4,426 ft., then N 45° E 226 ft.... Rigging up and S.D.

### BEAUREGARD PARISH

**Federal Pet. Co.'s No. 1 Lutcher-Moore,** 467 ft. S and 467 ft. E of the NW cor. of Sec. 4-6-12 ..... Drlg. shale 6,742 ft.

Federal Pet. Co.'s No. 1-B Lutcher Moore, 6 miles NW of No. 1 Lutcher Moore and near Fields ..... Location.

**F. W. Martin's No. 1 J. E. Cochran,** SE cor. of NE of Sec. 34-4s-12w (W part of county and 6 miles S of Merryville) ..... Drlg. 6,008 ft.

### CALCASIEU PARISH

**Fred Oil Co.'s No. 1 Faust,** 566 ft. N, 300 ft. W of SE cor. of NW of SE Sec. 26-8s-10w ..... Drlg. shale 2,875 ft.

**Steinberger Pet. Co.'s No. 1 Drew,** 330 ft. out of NW cor. of NE¼ of Sec. 26-10s-11w, 6½ miles SW of Sulphur ..... Location.

**Union Sulphur Co.'s No. 2 Barbe,** 279 ft. S and 350 ft. W of NE cor. of SE of Sec. 11-9s-8w ..... Drlg. 5,869 ft.

### CAMERON PARISH

Southern Sulphur Oil Corp.'s No. 1 Gulf of Mexico, near the mouth of the Calcasieu River ..... Drlg. gumbo 3,230 ft.; no report.

### IBERIA PARISH

Diamond Corp's No. 1 Edmond Viator, 1,908 ft. E and 450 ft. from SW cor. of Sec. 41-12s5e ..... Derrick.

**T. D. Spell's No. 1 Bernard,** 6,138 ft. SW cor. along western boundary line, then in NE direction 1,140 ft. along N line of Bernard land, 53 ft. S of well in Sec. 54-12s-7e ..... T.D. 3,894 ft.; S.D.

### IBERVILLE PARISH

Gross Pet.'s No. 1 Angelloz ..... T.D. 2,270 ft.; W.O.C.

### JEFFERSON DAVIS PARISH

**Humble O. & R. Co.'s No. 3 Devilbiss,** 1,399 ft. W, 466 ft. S of NE cor. Sec. 14-9s-4w ..... Drlg. shale 2,300 ft.

Humble O. & R. Co.'s No. 1 Martin Kratzer, 400 ft. out of SE cor. 120-ac. tract, Sec. 14-9s-4w ..... Rigging up.

**Shell Pet. Corp.'s No. 1 Jernigan,** 330 ft. E, 660 ft. S, NW cor. Sec. 12-9s-4w ..... T.D. 3,518 ft.; prep. to drill plug.

**Tide Water Oil Co.'s No. 1 Mrs. A. Bourgeosis,** 250 ft. E and 205 ft. S of C of Sec. 28-9s-5w ..... T.D. 5,213 ft.; P.B. to 4,100 ft.; prep. to start up.

### LAFOURCHE PARISH

**Barnsdall Oil Co.'s No. 2 Harang Plantation** ..... T.D. 7,216 ft.; S.D.

**R. L. Gay, trustee's No. 1 Godchaux,** 3,920 ft. N and 1,746 ft. E in common cor. of Lots 34 and 36, Twp. 15s-19e ..... Drlg. shale 1,710 ft.; no report.

**Southern Sulphur Corp.'s No. 1 D. L. Lagraize,** 300 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 34-21s-22e ..... Spudded and S.D.

### PLAQUEMINES PARISH

Southern Sulphur Oil Co.'s No. 1 Bay Adams, 2,325 ft. W and 326 ft. S of NE cor. of Sec. 23-20s-28e ..... T.D. 725 ft.; S.D.

Venice Corp.'s No. 1 Burras ..... Shale 240 ft.; W.O.C.

### ST. BERNARD PARISH

Joe Danciger's No. 1 Delacroix Land Fur Co., 2,442 ft. W and 660 ft. N of SE cor. of Sec. 127-14s-14e ..... Rigging up.

Southern Sulphur Oil Co.'s No. 1 State-Lake Borgus, 850 ft. N and 230 ft. E of SE cor. of Sec. 33-12s-15e ..... Shale 1,475 ft.; no report.

Southern Sulphur Corp.'s No. 1 Lake Lery, 400 ft. W. 500 ft. N. SW cor. Sec. 28-13s-15e ..... Shale 2,751 ft.; no report.

### ST. LANDRY PARISH

**Bailey Gaunce's No. 1 Lewis,** 300 ft. N and E of SW cor. of NW of NE of Section 29-5s-6e (workover) .. T.D. 5,017 ft.; S.D.

**H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co.,** 250 ft. out of SW cor. NE Sec. 15-5s-6e ..... S.D. 3,696 ft.

### ST. MARTIN PARISH

**Texas Co.'s No. 6 St. Martin Land Co.,** 660 ft. S and 500 ft. W of NE cor. SE Sec. 17-8s-7 ..... Drlg. shale 6,970 ft.

### ST. MARYS PARISH

**Black et al and Edwards Drlg. Co.'s No. 1 Chetimancha,** Sec. 34-13s-9e, 219-acre tract approximately 500 ft. at right angles SE and SW lines of tract ..... T.D. 6,501 ft.; S.D.

### TERREBONNE PARISH

**Texas Co.'s No. 1-B State-Bay Junop,** 2,300 ft. N, 950 ft. E of SW cor. Sec. 27-21s-14e ..... T.D. 7,150 ft.; salt; S.D.

**Texas Co.'s No. 3 School Board,** 2,630 ft. S and 1,384 ft. E of NW cor. of Sec. 16-22s-18w ..... Rigging up.

### VERNON PARISH

**Anderson & Kerr Drlg. Co.'s No. 1 Nona Mills,** 330 ft. S and W of NE cor. of Sec. 25-2n-9w ..... Gumbo 962 ft.

**Robt. K. Williams, Jr.'s No. 1 Llano Del Rio,** 1,185 ft. S, 1,000 ft. W of NE cor Sec 7-1n-9w ..... Rigged up and S.D

# NEW AND IMPROVED EQUIPMENT

## New Recorder-Controller Introduced by Tagliabue

The photoelectrically balanced recording potentiometer announced by the C. J. Tagliabue Manufacturing Co., Park and Nostrand Avenues, Brooklyn, N. Y.,

is a radically new type of recorder-controller in which a sensitive mirror-galvanometer is the primary controlling element, an inertialess beam of light taking the place of the customary metal boom or pointer. The beam of light from the galvanometer to a photocell is interrupted by right and left shutters operated in synchronism with electric contacts in an electromagnetic circuit through which in turn are operated the moving contact of the Wheatstone bridge or potentiometer and the recording and controlling mechanisms.

The photocell is not a calibrated element but serves only to detect the direction of the light beam and bring the galvanometer to zero deflection, according to the well known null method of balancing an electric circuit. The new instrument, therefore, is not a "photoelectric potentiometer," in the sense that a balance of photoelectric currents is implied.

It is evident that the galvanometer is free at all times from mechanical engagement, and this fact together with its low moment of inertia permits rapid balancing and control actions. Furthermore, a high current of sensitivity is available, permitting the use of high resistance, or of very long thermocouple leads without material loss of accuracy in balancing. Or on occasion a very low scale range does not require a very low resistance and the resultant disadvantages. The galvanometer is, of course, completely inclosed. A special feature is its platinum-gold alloy suspension of particularly high tensile strength.

## New Type of Floodlighting for Stations Is Developed

A new type of General Electric floodlighting projector especially for filling station and sports lighting is now available. This new open floodlight, the type AL-45, constructed to withstand all "weathering," is made of porcelain-enameled steel with cap fittings of cast aluminum. The weather-resistant, glossy-white, fire-baked porcelain-enamel reflecting surface of the reflector with A-symmetric distribution for best use of light on service station areas, can be cleaned with soap and water to restore its original efficiency. The projector has a green-enamel exterior.

Mountings are of cadmium-plated malleable iron. All sizes of large lamps, from 300 to 1,500 watts, may be used by utilizing an easily adjusted socket support. The floodlight may be flexibly mounted with cross-arm, pipe clamp, pipe cap, pipe top, swivel and stand, and swivel and rocker fittings. Water-tight bushings of brass with rubber gasket, brass packing, and clamping nut prevents leakage around entrance leads.

## Notes About Trade Literature

The Chicago Pneumatic Tool Co., 6 East Forty-fourth Street, New York, sends on request a circular describing and illustrating the CP external tube-end polisher.

—

The Deming Co., Salem, Ohio, announces a new 16-page catalog of Deming pumps, water systems and auxiliary parts and equipment.

—

Worthington internal-bearing, double-helical rotary pumps are the subject of a bulletin issued by the Worthington Pump & Machinery Corp., Harrison, N. J.

—

The Allis-Chalmers Manufacturing Co., Milwaukee, Wis., is sending on request leaflet No. 2,173 on squirrel cage induction motors, Type AR.

—

CP air and gas lift equipment is described in a bulletin obtainable from the Chicago Pneumatic Tool Co., Chicago Pneumatic Building, or from its East Texas representative, the Petroleum Construction Co., Kilgore, Tex.

—

The Esterline-Angus Co., Indianapolis, Ind., manufacturer of graphic instruments, is sending out its case No. 2 in "Solving Industrial Crimes." It answers the question, "Why does our power load start decreasing 40 minutes before quitting time?"

—

A request to the Gilbert & Barker Manufacturing Co., Springfield, Mass., brings a bulletin describing its Model 70 Calco-Meter automatic computing gasoline pump.

—

The Oil Well Supply Co., Pittsburgh, Pa., is distributing a folder on "the longest string of casing ever run," that in the Denver Producing & Refining Co.'s well in Caddo County, Oklahoma.

—

A pulverized fuel bulletin, obtainable from the Foster Wheeler Corp., 165 Broadway, New York, contains 24 pages describing in detail the impact mill (aero type) and the Tricone ball mill (Hardinge type).

—

Sil-o-cel C-22, described as both an insulation and a refractory, is the subject of a bulletin mailed by Johns-Manville, 22 East Fortieth Street, New York, to those who ask for it.

—

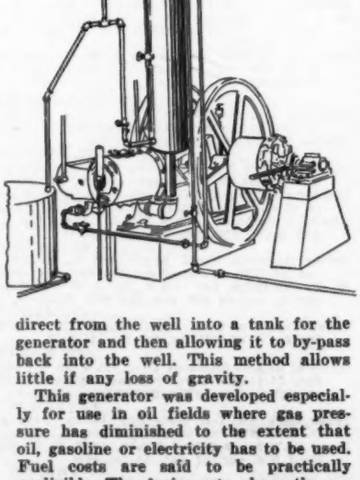
A catalog of Lava and Alsimag made-to-order ceramic parts, which have wide use in the oil and gas industry, will be sent on request by the American Lava Corp., Chattanooga, Tenn.

—

A 72-page illustrated textbook entitled, "Short Cuts to Power Transmission," has just been published by the Flexible Steel Lacing Co., 4607 Lexington Street, Chicago. This book is a revision, with new chapters, of a book which the company has published in years past. It contains information needed in solving ordinary belt transmission problem, as well as valuable material on good practice.

## Small Gravity Loss With New American Generator

The American Iron & Machine Works Co., Oklahoma City, Okla., has developed a new gas generator designed to minimize fuel costs. The American generator generates gas from crude oil by pumping oil



direct from the well into a tank for the generator and then allowing it to by-pass back into the well. This method allows little if any loss of gravity.

This generator was developed especially for use in oil fields where gas pressure has diminished to the extent that oil, gasoline or electricity has to be used. Fuel costs are said to be practically negligible. The device sets above the engine, thus requiring no additional space, and it is easy to install.

## Ideal Seal Can Be Spread Thin, But Never Gets Hard

Modern chemistry is credited with another achievement in the new universal sealing compound, Ideal Perfect seal. Nonsoluble, noncorrosive and nonoxidizing, this new compound, in a paste form, can be spread as thin as .001 inch, seals instantly, yet the manufacturers say it never hardens or becomes brittle.

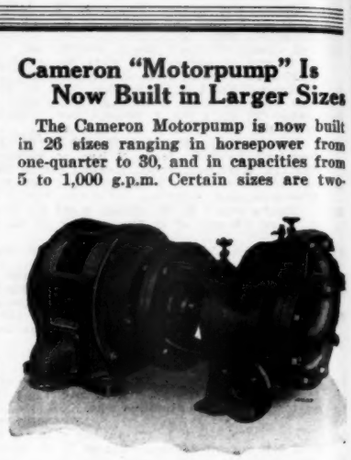
Used in connection with gaskets, or in some cases without them, or as a seal for flanged or threaded joints in fuel oil, steam, water, air, gasoline, lubricating oil or in any type or size of pipe lines, Ideal Perfect seal, according to the manufacturers, cannot be washed out, is unaffected by atmospheric conditions, heat-resisting up to 400° F., prevents rust or corrosion, may be applied on any material or surface, seals as perfectly as shellac, yet permits quick and easy disassembly at any time.

Being completely free of grit and with its highly lubricant castor oil base, Ideal Perfect seal is an effective rust preventive for threaded connections, and a corrosion preventive on electrical connections, battery terminals, etc. Details may be obtained from the Ideal Commutator Dresser Co., Industrial Division, Sycamore, Ill.

Appointment of Railey & Milam, Inc., 27-39 West Flagler Street, Miami, Fla., as distributors of Enduro stainless steel and Toncan iron, has been announced by N. J. Clark, vice president in charge of sales, Republic Steel Corp., Youngstown, Ohio. The Ohio Valley Hardware & Roofing Co., Evansville, Ind., is now distributor of Toncan iron.

## Cameron "Motorpump" Is Now Built in Larger Sizes

The Cameron Motorpump is now built in 26 sizes ranging in horsepower from one-quarter to 30, and in capacities from 5 to 1,000 g.p.m. Certain sizes are two-



stage units and some other sizes are fitted with a self-priming attachment, which makes them suitable for use as sump pumps.

The entire line, together with tables of capacities and performance data, is fully illustrated in new catalog No. 7,464, a copy of which can be obtained from Ingersoll-Rand Co., 11 Broadway, New York, or any Ingersoll-Rand branch office.

The Motorpump is a complete pumping unit, with built-in electric motor and pump rotor on the same shaft. Because of its perfect balance, little foundation is required. It can be operated equally well in any position.

The self-priming Motorpump is covered by a separate bulletin, No. 2,070.

## Usual Position of Spring and Diaphragm Reversed

In the new Stabilflo valve, the Foxboro Co., Foxboro, Mass., has reversed the usual position of diaphragm and spring. The result is a valve that is said to give an exact response to the slightest change demanded by the control instrument. The suspended construction of the Stabilflo diaphragm motor insures smooth valve action. The motor requires no guides and therefore eliminates friction by removing its cause. A special flexible coupling between the diaphragm motor and the valve stem permits the stem to establish its normal alignment. This construction is shown in the illustration.

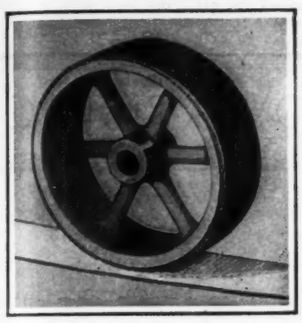
Smoothness is enhanced further by a valve-stem lubricator which reduces stuffing-box friction. The lubricant protects and lubricates the packing and prevents leakage. To assure perfect control throughout the entire range of the valve, the motor has been designed with a power factor ample to give true control results equal to the theoretical valve characteristics. The new valve port construction gives a flow rangeability of 50 to 1. This means that the Stabilflo valve has equal percentage flow characteristics between 2 and 100 per cent valve capacity.

thus insuring satisfactory control for all demand conditions.

The open throat of the yoke permits air to circulate freely and protects the diaphragm against excessive temperatures. The chrome-vanadium steel spring is enclosed in an air-tight pressed steel chamber which protects it from corrosive action. Each valve is equipped with a position index that shows the position of the valve plunger, and also shows at a glance whether the valve is an air-opening or air-closing type.

## Belt Slippage Reduced by Gripwell Pulley Covering

The injurious effects of slippage on a belt drive and the loss of power and increased wear and tear on equipment through the use of overtight belts in an



*Transmission pulley treated with Gripwell pulley-surface covering*

attempt to reduce slippage are well known. To eliminate these troubles and to improve the efficiency of the belt drive, a pulley-surface covering has been developed by the Gripwell Manufacturing Co., 105 West Fortieth Street, New York. It is known as Gripwell pulley-surface covering and is designed to increase the frictional contact between the belt and the pulley face, thereby reducing slippage to a minimum.

When the Gripwell pulley-surface covering is examined under the microscope, it shows minute elevations and depressions. As the surface of the belt is of similar texture, the two surfaces mesh and better contact between the belt and the pulley is obtained, with greater friction and, naturally, less slippage and less loss of power.

Gripwell pulley-surface covering consists of a specially processed, waterproofed fabric, Gripwell Duktex, firmly attached to the pulley with Gripwell cement, a synthetic vegetable and oil compound, whose main characteristic is its quick-drying quality and its tenacious power.

### AIRCO TO DISTRIBUTE SIL-FOS

The new brazing alloy, Sil-fos, manufactured by Handy & Harman, New York, will be distributed hereafter by the Air Reduction Sales Co. from all "Airco" stations throughout the United States, in addition to many supply houses. The outstanding advantage of Sil-fos is its low melting point. It flows freely at 1,300° F. It is extremely fluid at this temperature and penetrates deeply to all parts of a joint. Manufacturers will find joints made with this new brazing alloy to be ductile and as strong as the metals joined and resistant to shock or continued vibration.

### OPENS NEW KILGORE OFFICE

Price-Trawick, Inc., of Stroud, Okla., manufacturer of the P.&T. kickoff unit, has opened a new office and warehouse at 219 South Commerce Street, Kilgore, Tex., with Fred Price and Lee Delf in charge of sales, and Edward Riley in charge of the store. Price-Trawick, Inc., is represented in the Gulf Coast by the Gulf Engineering Co., Houston, Tex.; Buck & Stoddard, Inc., Los Angeles, Calif.; and Price-Trawick, Inc., 1111 S.E. Twenty-ninth Street, Oklahoma City, Okla.

# Among the Equipment Houses

Link-Belt Co. has opened a warehouse at 413-15 Second Avenue, Dallas, Texas, where extensive stocks will be carried of Caldwell and Link-Belt conveying and power transmitting machinery.

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The Climax Molybdenum Co., with main offices at 295 Madison Ave., New York, has opened two additional branch offices, one in the Straus Building, 310 South Michigan Avenue, Chicago, in charge of E. R. Young, and the other in the First National Bank Building, Canton, Ohio, in charge of Paul M. Snyder.

—

Wilson & Bennett Manufacturing Co., with offices and factories in Chicago, Jersey City and New Orleans, have established a chemical research department for the benefit of users and prospective users of steel containers.

—

J. H. Howard, chief engineer, and R. A. (Buck) Weaver, salesman for J. H. McEvoy & Co., Houston, Tex., started on a trip through North Texas and Oklahoma, visiting important oil companies and explaining McEvoy products.

—

James A. Long, until recently general manager of the Woodward Iron Co., has been appointed southern factory representative of the Macwhyte Co., Kenosha, Wis. Mr. Long's headquarters are at 1416 South Seventeenth Street, Birmingham, Ala.

—

The Southern States Co. has removed its headquarters from Shreveport, La., to 1113 Tower Petroleum Building, Dallas, Tex., better to service its clients.

—

The D+B division of the Emsco Derrick & Equipment Co., Los Angeles, Calif., on May 15 celebrated its third consecutive year of no lost time accidents.

—

Seth H. Taylor, Jr., has been appointed Pacific Coast manager of the Lincoln Electric Co., Cleveland, Ohio. Mr. Taylor's headquarters will be in San Francisco. For the last four years Mr. Taylor has been in charge of the Los Angeles office.

—

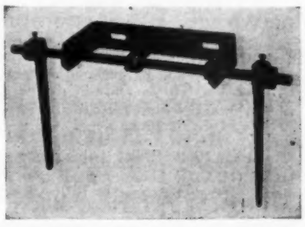
The Wyatt Metal & Boiler Works, Dallas, Tex., steel plant fabricators and manufacturers of welded steel tanks and welded steel pipe, have opened an office at 401 Kennedy Building, Tulsa, in charge of H. M. Rosevear.

—

The Chapman Valve Manufacturing Co., Indian Orchard, Mass., has reopened a direct factory branch at 111 West First Street, Tulsa, under the direction of E. H. Gaddis.

## Judd Belt Safety Device Reduces Danger of Fires

The Imperial Belting Co., Lincoln and Kinzie Street, Chicago, manufacturer of O&G belting, announces a new device designed to shut down any gas engine automatically when the belt starts from any cause to climb the flange on the clutch



pulley. This attachment, the Judd belt safety device, will likewise shut the engine down in the case of excessive slippage, according to the manufacturer, thus preventing the burning of the belt and in addition act as a safeguard against rig fires from burning belts. This safety attachment can be adjusted to any width of belt and to any degree of safety desired. It is said to have been tested for over a year before being placed on the market.

### FLAT-FACED COWL INTRODUCED

An innovation in motor truck practices is announced by Chevrolet Motor Co. with its introduction of the flat-faced cowl offered as optional on its 112, 131 and 157 wheelbase models. The new design permits the use of a Chevrolet chassis with any custom body built for a flat cowl. The new construction was designed for the benefit of the many lines using special bodies, such as public utility construction bodies, contractors' dump bodies, and other types that do not utilize separate cabs. The regular Chevrolet truck chassis carries a streamlined treatment of the hood, cowl and front pillar posts. On trucks of the three wheelbases listed, the flat-faced cowl trucks give, respectively, the following distances from the face of the cowl and the rear end of the frame, 104 7/16 inches, 124 7/16, and 150 7/16 inches.

## Bridgeport's Buffalo Emblem Is Reproduced in Woods

An unusual piece of art work, a reproduction of the emblem of the Bridgeport Machine Co. of Wichita, Kans., is attracting much attention. The picture, 24 inches in diameter, is made entirely of rare hard woods in their natural colors. One hundred and fifty pieces are closely joined in such a manner that the grain structure and natural markings of the wood produce the effect of brush painting. Ten foreign and domestic woods, obtained from almost every country in the world, were used in the work, which was done by I. C. Lawless, publicity director of the company, and presented to A. A. Buschow, president and general manager.

The American buffalo, enclosed in a circle with the wording, "Monarch of the Plains," has been used as the Bridgeport Machine Co.'s insignia for years, and it appears in all of the company's advertising. It was chosen to typify the stability, strength and aggressive spirit of a pioneer western institution, replacing the swan insignia formerly used in the company's underreamer advertising. The

novel creation excited admiration when it was displayed in Bridgeport's booth at the 1934 oil show in Tulsa.

## Men Well Known in the Equipment Field

U. V. Seales, for the past five years assistant purchasing agent for Rio Bravo Oil Co., has been appointed secretary-treasurer and assistant general manager

U. V. SEALES

of Authorized Appleman Bit Service Co., Houston, Tex. Mr. Seales goes to this organization with five years' machine shop experience in West Texas, prior to 1925, at which time he joined the staff of Associated Oil Co., in Houston, until 1929, when he joined the Rio Bravo company.

Authorized Appleman Bit Service Co. is completing expansion work on its headquarter plant in Houston. The production capacity of the new Hunt core barrel has been more than doubled.

## Goodrich "Flexseal" Joint Gives Greater Flexibility

A new hose joint which eliminates all contact between metal and fluid has been patented by the B. F. Goodrich Rubber Co., Akron, Ohio. This construction is said to permit greater flexibility and affords a perfect seal in all suction service, and for discharge service up to 125 pounds working pressure.

The Goodrich "Flexseal" joint is designed particularly as a substitute for

nipples and flanges. It is recommended particularly for the larger diameters of suction or discharge hose handling abrasive materials and hose handling acid or other corrosive liquids.

The success of the joint results from the unique end which is built into the hose. This end consists of an enlargement, or bead, reinforced with numerous plies of fabric surrounding a rigid steel ring of angular cross section. The joint is assembled with the aid of split flanges and standard bolts. Two successive lengths of hose can thus be bolted together with the rubber ends of the hose compressed to form a seal.

The spacing of the bolt holes is standard so that the end of the hose can be fitted to the end of a standard pipe. When the bolts are drawn up the pressure of the split flange against the flared hose end provides a positive and unyielding clamping of the joint.

## Oklahoma Fields

(Continued from Page 66)

NW SW NW Section 30-5-5, was shot in Hunton lime at 2,250-60 feet and flowed 192 bbls. in 24 hours.

Manahan & Sledge have mudded the hole and moved out the tools from their No. 1 P. A. Morris, NW SE SE Section 13-2-6, which had been drilled to 5,166 feet without a showing of oil or gas.

Magnolia Petroleum Co.'s No. 1 Norris, NW SE SE Section 18-2-7, in the Fitts area, had Viola lime at 4,950 feet and a showing of oil at 5,010 feet and was drilling at 5,035 feet. Another deep test, Blackstock and others' No. 1 Lewis, NE NE SE Section 19-2-7, was at a total depth of 4,666 feet, with a fishing job. Dolomite was topped at 4,615 feet. Magnolia Petroleum Co.'s No. 1 Lewis, SW cor. Section 19-2-7, was given a dose of 1,000 gallons of acid loaded with 165 bbls. of fluid and later made a 10-bbl. flow and "died." It will be reacidized. This test had Misener sand at 3,712 feet and Sylvan shale at 3,989 feet and was bottomed at 4,002 feet.

J. C. Shaffer's No. 1-A Hardin (a twin), NE NW SW Section 30-2-7, set 9-inch casing at 1,940 feet, sand at 2,375-92 feet; sandy lime to 2,432 feet, and sand to 2,435 feet, total depth. The well is a 40,000,000-foot gasser, spraying oil.

### Marshall County

In Marshall County, Centrop Petroleum Co.'s No. 4 Burge, NE SW NE SE Section 25-7s-5e, made a 33-bbl. initial production from sand at 521-35 feet. It was completed.

R. A. Godfrey's No. 4 Burge, C NW SE SE Section 25-7s-5e, was a 47-bbl. completion at 535-54 feet. Same operator's No. 3 Cox, had sand at 358-65 feet and was drilling at 366 feet, with an estimated 12-bbl. well in sight.

Russell & Wham's No. 1 Sutliff, SW SE SE SW Section 36-5-6, deepened from 1,110 feet, was dry and abandoned at 1,307 feet.

### Jefferson County

O. V. Beck completed No. 10 Seay, NE NW SW SE Section 34-6s-5w, in the Seay Pool, Jefferson County. It pumped 35 bbls. of oil and 480 bbls. of water in 24 hours from lime at 1,573-74 feet. Same owner completed No. 3 Seay, SW SE NW Section 34-6s-5w, a 47-bbl. well from a sand series from 1,477 to 1,538 feet.

### Stephens County

Owl Oil Co.'s No. 32-A Billy, SW NE NW SE Section 9-3s-5w, Stephens County, was completed as a 50,000-foot gas well at 408-40 feet, and same company completed No. 46 Wilson, CWL SE SE NW Section 9-3s-5w, a 2-bbl. well at 463-99 feet.

### Carter County

Carter Oil Co. completed No. 2 Krieger, NW cor. SE Section 8-2s-2w, which started at 92 bbls. a day from sand at from 1,987 to 2,132 feet, total depth 2,188 feet.

Coline Oil Co.'s No. 10 Higgins F. SE SW NW Section 8-2s-2w, was completed, a 25-bbl. well from a sand series from 1,395 feet to 2,775 feet.

Karchmer & Smith's No. 1 Lynn, NW SE NE Section 28-1s-2w, is estimated as a 200-bbl. well, but it was not completed. It penetrated a host of sands and sandy shales from 1,502 feet down to 2,205 feet.

## Kansas Fields

(Continued from Page 67)

NW cor. NE Section 34-25-14, Woodson County, was dry and abandoned at 1,604 feet.

Great Southern Oil Co.'s No. 33 Stevenson, NW SE NE Section 2-26-8, was shot at 2,358-2,425 feet and made a 10-bbl. well, completed.

### Sedgwick County

Sovereign Oil Co. was drilling at 860 feet in No. 1 Scherger, SE SW NW Section 6-26-1e, Sedgwick County.

Maralyn Oil Co.'s No. 1 Rothfus, NE NW NE Section 7-26-1e, made a 10-bbl. completion at 2,579-2,620 feet, which had been acidized.

Cosmic Oil Co. has a 32-bbl. completion in No. 1 Loomis, NW SW NW Section 15-27-4, from a pay at 2,004-35 feet, which had been acidized.

### Cowley County

Continental Oil Co.'s No. 3 Curry, SW NW SW Section 26-34-2e, Cowley County, swabbed 104 bbls. a day from chat at 3,434-98 feet. The crew was testing.

### Butler County

In Butler County, Empire Oil & Refining Co.'s No. 17 Gussman, NW NE NE Section 18-26-5, Eldorado district, was acidized in Kansas City lime at 1,956-87 feet, but the returns were so small that the hole was abandoned.

Flint Hills Oil & Gas Co. was drilling at 1,000 feet in No. 6 Martin, NW cor. NE Section 27-28-4.

## Canadian Fields

(Continued from Page 78)

Royalties' No. 1 Oliver, LSD 3, is drilling in hard rock below 335 feet.

In the Central Turner Valley area, New McDougall-Segur Oil Co.'s No. 7, Section 12-20-3w5, is drilling below 900 feet.

### Pekisko Hills Test

On the Pekisko Hills structure south of Turner Valley, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, is resuming at 1,081 feet. It has a wet gas flow around 1,000,000 feet, which is used in the power plant.

### South Test Resumes

In the old Oil City Field, Waterton Lakes Park, Oil City Royalties' No. 1 Patrick, Sectioon 30-1-30w4, has resumed drilling below 1,600 feet.

### Twin River Test

On the Twin River structure south of Lethbridge, Nordon Corp. and C. A. Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, is reported on the pump and taking production from the top of the Madison at 3,930 feet.

### Aldersyde Test

On the Aldersyde structure east of Turner Valley, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-28w4, is reported down 6,265 feet. This is the deepest test ever drilled in Alberta outside the Turner Valley Field. Recent reports of encouraging oil shows with some gas has not been officially confirmed.

### Hunter Valley Prospect

In the foothills north of Calgary, Hunter Valley Oil Co.'s No. 1 McLaren, LSD 12, Section 13-31-10w4, is making new hole below 2,666 feet. The test was inspected recently by representatives of the Alberta government, the British Pacific Trust Co. and the Hunter Valley Oil Co. The party included R. G. Reid, minister of lands and mines, and John Harvie, deputy minister; F. S. Grisdale, minister of agriculture; Lord Southborough, Viscount Elveden, Bryan Guinness, W. S. Eyre, C. H. Bland, A. J. T. Taylor and J. Anderson, representing the British Pacific interests; and Campbell M. Hunter, R. J. McLaren, Herbert Greenfield and A. deB Winter, of the Hunter Valley Oil Co.

### Dirt Hills Test

Highwood-Sarcee Oils, Ltd., is making a new contract covering completion of Pine River Petroleums' No. 1, in LSD 8, Section 23-12-24w3, on the Dirt Hills structure in southern Saskatchewan. The location is about 50 miles southeast of Moose Jaw. Drilling will likely resume in July.

### Ontario Drilling

In Sarnia Township, Leo Wilson Syndicate's deep test in Lot 7, Concession 3, near Bunyan, is drilling below 2,823 feet.

In Euphemia Township, Lambton County, Laddwill Oil Co. of Detroit has started work on No. 1 shallow test in the west end of the Township close to the Dawn-Euphemia Township line. Acreage has been subleased from R. L. Pattinson and associates of Chatham and No. 1 test has just spudded in. Shallow oil shows were met in unsuccessful tests drilled for gas in this area by the Union Gas Co. some years ago.

In Norfolk County, Prairie Oil & Gas Co.'s No. 4 on the Mrs Elwin Stilwell farm south of Tillsonburg is rigging up. Location is about 800 feet south of No. 3 producer, which is reported to have increased its gas flow from 600,00 to 1,000,000 feet a day.

## LEGAL

Department of the Interior. Notice is hereby given that pursuant to the act of May 23, 1934 (Public No. 248), the lands comprising Fort Morgan Military Reservation, Baldwin County, Alabama, are offered for lease for exploitation of oil and gas and other minerals, to the qualified bidder of the highest amount offered per acre as a bonus for the privilege of leasing the land. The lease will be issued under the provisions of the act of February 25, 1920 (41 Stat. 437), as amended, and the regulations thereunder, for a term of twenty years with right of renewal, on condition that drilling be commenced within three months from date of lease, at a royalty on oil ranging from 12½ to 33⅓ per cent of the production, and a rental payable annually in advance of one dollar per acre. Such lease will contain a provision requiring compliance with the Code and all acts of Congress heretofore or hereafter enacted to regulate or control the petroleum industry. The area to be leased is approximately 493.9 acres, inclusive of the tract of about 25 acres quit-claimed to the State of Alabama, which tract will be included in the lease provided the State consents thereto prior to issuance of the lease. Only sealed bids received by the Secretary of the Interior not later than 10 o'clock a. m. July 24, 1934, will be considered, the outside envelope in which the bids are enclosed to be plainly marked "Bid on oil and gas lease, Fort Morgan Military Reservation." Each bid must be accompanied by certified check on a solvent bank or postal money order for one-fifth of the bonus bid, and the successful bidder must, when required to do so, furnish evidence of his qualifications to hold a lease under the act of February 25, 1920, pay the remainder of his bonus bid and the first annual rental. Bidders are warned against violation of section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combinations or intimidation of bidders. The right is reserved to reject any and all bids. (SGD.) HAROLD L. ICKES, Secretary of the Interior.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